

WOODS HOLE: A SOENTIFIC UTOPIA FRANK HERBERT AND THE ILLUSTRATED DUNE A NEW NOVEL BY STEPHEN KING OWNIS 10-POINT PRESIDENTIAL PLATFORM

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By Gerard K. O'Nell

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The Space Studies Institute Box 82, Productor NJ 08549, publishes a quarterly newsletter for subscribers (EN) a vesti

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Ownit's extransition content has also earnes savaral holeworthy protein. Sciences writer Dennis Overbye was named the 1980 necessarial of the American Institute of Physics journatian award for improving public understanding of physics and advoromy in a properning article Wizerd of Time and Space 1 a profile of Smish astronomer Stephon Hawking appeared in our February 1979 asue

Amady the recopert of the 1978 and the Galaxy weeks for most outwarding science from publication. Only has a line avery the Nethola Awards for Sandhings, "George H. H. Markets sprealing table of particular based with the product of the Arthrace science and the product of the Arthrace science and the particular of the 1979 Hag. Award for many professional of the 1979 Hag. Award for many professional of the 1979 Hag. Award for many professional of the 1979 Hag. Award for the under the 1979 Hag. Award for many professional of the 1979 Hag. Award for build based on the 1979 Hag. Award for the under the the 1979 Hag. Award for the product of the 1970 Hag. Award for the produc

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The tifty ninth annual Art Devictors' Award was prosented to several Oroni centributions including former Look photographer Dan McCoy for a conceptual depiction of antificial intelligence in "Intelligent Machania" (October 1998). Frenchman Flenre Lacontes, who at the tender age of thirty eight began his cancer as an antist received an award for our July 1978 cover

The set of the set of

Stephen King, author of Gama, The David Zone, and The Strinng, has perned a brilliant new chiller. "Finalianar," which we've excerpted exclusively for our saddrar (page 30) CC

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Eden" in the April (1992) issue, one parcent he truly belower the spen-ofteneticeducer.

It is true that shuttle technologios will those oper reductions will be passed on ex-

Technology may change, after all but

Langley B C . Canada

Rev Bradburk I have been able to shut a

system has nothing but gripes about our space program. Articles such as "Bevend

#### In His Image

A number of investigators are studying the Shroud of Turn to determine whether it Prouch the rhetonic socul the Shroud II already have an experiment under way in Marrendit Country Satas, among/7 Cloning is a small technical step from this

Sandy Shekopus Boectrum Technology Service

#### Last Words

COMMUNIC/ATIONS

Your Last Wood onlymp (May 1980) did a tentible insustice to a good science-fiction operang all the hetches to let the creature not have blown the creature into space all

John Moran

monsterne II and World Annu 1980) Autorit by the research of a special committee currently constructing a sewer that promises to be the ultimate in when it can bask in surisen luxury More class should adopt this concept of

incorporated boundaries. We of Rates

Battle Creek, Mich

1990 Last Word

Specificady, I am referring to the part on

# DALOGUE

# FORUM

In which the number, notices and consequentiants decuss by purpose animaginal of Own-i and theorems and speculation of general-inhumation brought forth. The views published are not reconsently these of the object. Letters for publication should be maded to Owner Stream, Owner Magazona. 500 Third Avenue. Nam Stak. NY 10022

#### Support Our Space Program

I per devoting this letter to callege autoretris Haven glavend of the doals not both the Galake and Nelviny a Conex/Temper Birmissofti and the embanasaing Galay of the chuite program...and having even the space program...and having even the space program...and there to sup the the those of us who support our spaces.

The method for letting the government know how we feel is sumple. Begin a petition at your college, collect signatures and submit themto the proper offices of the President and Congmain

- Advances to the President on Space Alians, Benjamin Hubberman, Evecutive Office Building, Washington, DC 20500
- Desctor of Space Science and Applications, House Subcommittee Dan Fuque Room 226, Raybam Office Building, Washington, DC 20515
- Director of Science Technology and Space, Senate Subcommitive Adia E Stevenson, U.S. Senate Waitington DC 20510

There are nearly 1.000 colleges and unversiles in the United Stable with an average of 2,000 students per institution. We represent a powerful focus and we can charge out fittee.

Peter H Diamandas Great Nack, N.Y.

### Sall-Righteous or Good Gardener?

Most of James Randis comments in Omno (Interview April 1980) seem correct Vis Jas Randi rails report the shoareserving of a thir Geller the shoar manching with his own Low Awards and the Bandi Chellenge He cates cases that smack of slow-wited foils he deems application for adjuster Little worldon his offers to prove cleaned abilities are turner down. Who wants to be the public fool?

The problem is an inter-amplicite of real-episodeus companys. What people balance may be foolish or even disriprava, but the right to those builds must be protected. Card Sagan recommends strong public education to inform and affect those beliefs. We read to understand the generation building and fact.

As Biggin has ported out, service in the origin has ported out, service in the origin has a soling coefficient many alon projections that the medicated Law of Thermosynamics at which as the polyposition in prostellet to possible. This if integruing this four polypoint and a train to polyposition in prostellet to possible. This if integruing this four polypoint and a strain the polypoint of the origin to implement outside with Ware the cost it implement of the the way polypoint. If ware the part way poly to the form of the origin to implement of the origin to implement of the origin to t

James Bandio a Jory about his "konten" desiciotantion modelly sorves to demonstrato his lock of understanding of the resture of kanda and his purpose of board bisaking We are concerned about the enconcesus and dangerous impression he hais cleated – and more concerned that his peems to be arguing more korn bals theories to be arguing more korn bals

One of us (M. David Store) is a accence writer and a thred can black bottin Too Kwon Do, which ha has been skudying for ovari 15 years. The other (Richard A. Berand) is a threasthcal physics 1 and a second dan black bott Both of us share. Band (is skeptic ow about 158° White it is centrally listed tail al 2015).

White it is certainly triat that bit of the stryching can be failed, the fract emission that any black before any leg timate style can break upreparated unstanded undired wood in our style for example, part of the test (or find an contast) of besidet(p a maintmain (theme another Dept) et the improvement that Rand gives, these in dial table each even who have been study on table each even the beside the karbo for two or three years can have spotsis with this part of the bot and in fact, subjects have been known to make a brack and in yae thermexives. Beaking a bone in the hand or lock, while new is that any show how something can be failed, it does not follow have something can be failed. It does not follow have something can be failed.

What bothers us is that Rand's commons about lansas, based on memoriaresearch and slopp threising demonstratise such a complete tack of valiability that we can't halp wonduring di his debuyieng al sity Up Galler is just to baselass. We support not, but we urge Bandito by more careful or he may doftis cause more herm that good.

> M. David Storye Professor Richard A. Brandl New York: N Y

Cognitizations on your visit wire with the Ansame (Runch), the downers there cleans for its attracts takes of allocities and another the second second second second analyzed sets and has belanses a too well-another partners on a sub-second and the second second second partners and the second second second partners and the strate sectors and and because the second second partners and the strate sectors and second second second second partners and the strate sectors and the sector sectors and the sector sectors and the strate sectors and the sector sectors and the strate sectors and the sector sectors and the secto

In April Spall pan an informative with Lamos Backtine negation Hierdiscontation Certain properties used in plaging a senior of assomments at Standard Research Institute (SR) Certain basis of this selection (Standard Web Certain Certain Hermitian Standard who careford out the "subplic Veroid (Standard Med The Iss description and my oppenacies are no avy standard Twas Stream No cere Invois where Reads gets his version min Hermitian that this State Certain before and has been informed of its inaccuracy, yet he parate in white can only be called "goes distances". Before you publish such near-libelous attacks against legitimate searchers, made by a concus magician who teels his card threatened by reality you might at least messigate the charms.

#### Peter Schwartz SRI International Monig Park, Calif.

James Randi regi-se. The "slow-entited folk" innohood are those studed by perspoyohologists as envacies workers. And a resignain who enakes a fool of this holper makes a fool of humalif as well. Not understanding how a trick is done makes no one a fool —ecospit in his own instel

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My claim is not failse

#### Nuclear or Natural Threat?

In Onive (Earty, April 1980) you decues the fisien of light descrised by the Vela satellite. As the article safets, the expensis support that the Tight was caused by some sort of nuclear device. There s another explanation possible not discussed in the stratic. The lists could have been claused by anitaral phonomenon smallers the Targuda explanation and the targuda column of the Cuboder 1979 testing you automatised whill asis income about the senter replaces the hard taken takes and the phonomena of the targuda event metabolar to change in table. The attrauted is a manately possible of the attrauted is a manately possible of the tem Environ Doment

I suggest that the first series by kills was another such methods for RW kills also data is killed to be approximately the support of the support of the support of the support situation and majority of the support field of the support of the support situation of the support field of the support of the support field of the support of the support situation of the support of the support support of the support of the support support of the support of the support probability of the support of the support support of the support of the support of the support support of the support of the support of the support support of the suppor

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#### Technological Instalation

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The first is, however, most bette can and should be completely instaul. Fear is, the number one factor in the pain most women endure-initiator. Antisaud, werm, welcoming dimosphere to a binnistito bath mother and child. A Desate an exclain is a disatir, step that results in medical costisciation for the mother and infatt

Contrary to Cole single cattor that Desine an endown such a ray period babelin. The draws was a roughly site and the best method of a site years instant as explained of a site years manual explained of a site years manual

Thunder Bax Onl Canada

### More on Califie Mutilations

I feel i must respond to Alari K. Berghams letter (Forum April 1960) on the catfle must likion mysterly Bingham auggests that the federal government is monitoring the long-term affects of nuclear tests in the West by surreptriously killing and class cting privately owned cattle

Willie our government twess to do simple things in correlax and expensive weight, it adams unlikely that in would risk things a blad of hexpolins all right over the simulation of the simulation of the beginning correct about the grown ment's memory, i would be much expertionlines and hexe in world water a annual as any other call to buyer does . Another as the call to buyer does . Another pains would been twen FDX missil integrapains which been the there is the simulation pains which been the there is the simulation of the there is the simulation of the simulation of the simulation of the part which been the simulation of the simulation of the part which been the simulation of the simulation of

I have been disciply incived in the interlegistical tables entering a simulated dealing areas 15% when a subverse result. When the million and the second second when the million has never conducted makes or them cas's waitere experiments about the year when the second present by law information. The book present by law inforcement approves instance of them are explained by the second second present by law inforcement approves instance of them are explained by the second second explained with the second explained them are explained by the second second explained them are explained by the second second million myster with the second explained them are and the second second million myster in the second myster in the second myster in the second myster in

Michael D Abors Minnespicks, Minn

#### As Time Goes Bi

The case is not closed this the April 1860 Camps calarmy por Clock Problem states that in 12 hears, the hands of a clock are concreting at (1) 12 c0, (2) 105, (3) 2 t0 (3) 15 (5) 4 c0, (5) 6 28, (76 6 30, 18) 7 58, (9) 4 e0, (10) e4-5 (11) 105 (12) 21 (5) 7 he not (2) hours would be stand oppin at 12 00. Take time to compiler it

Lyrvi Ericksen Lockpart 18

Seet Morris replies, in the introduction to this puzzle. I said it was a great one for altering arguments—and I was right. How can the hands of a clock cancele at 15 and and agen five mandes table at 12 007.

For the second, since an the thread Multi devia function according is writer of the top and function according to the second second methods with the second second second function of the second second second function of the second second second field second second seco LVING PLANET

### EARTH

By James E. Lovelock

magine the control dack of a space ship as it approaches is newloand planetary system. The commander turns to his icheef exclosions and axiss. "Do any of those planets bear life?

The C E replies confidently "Planet Three has abundant chemical life along with an atmosphere we can breathe "

How could the C E tel? By using the telebroscope, which is able to detect till across ten or exemit unchicals of millions of kilomeans of space. The device, thereoped union? MSAs promoving 15 years ago uses the information in reliacated surglars to determine the contents of a planet & stronghere.

There's nothing unusual about finding some supmised within a new invention is used. The stelehorscope office datase to, was no exception. When turned around and maned on Earth it spain off he assoriating suggestion that the on our planet is integrated on a global scale Earth as a planet is nitive.

An entry as large as a planet and with the power to control is own habital needed a name to match #. William Golding the reveilst, suggested Gas, the earth goddess of the Greeks. It also needed a collaborater to put some fash and the base bones of theory I was in deed fortunate to have Cyrin Maguils help me to deed to Casa.

The evidence for Gata sex intercetanges all the way from averaginary to apploys Bats in glabular clusters share more brightly as they age if our sun hell done the same, the output of fail and energy has increased by 25 percent area life beam on Earth

The meson schedule control why haunt faichts amperature nich according// Why users are now boling? The snewer to Our of mate depends not only on the haut of the sub-table on the goess of the air and on the effection and emission of undepend heumiand and sets.

The average temperature of the earth has scarcely varied from what it is tookly. The coeleges have all-scated only the relatively comportant upper 15 percent and lower 15 percent of the planet is surface, while the regions around the equator which incluses? Of percent of the



It is possible in the table in the table is autisated if the early have of ways changed by abordent to maintike is constant climate. To have draw this for 35 bitlion years however, sitration of 45 bitlion maniple and autophysical to sufface and autophysical composition is also maintain the optimal climate. This is and of the interpret for Gala.

Mars, Barth, and Verva en fina ght for any final every status composition at the mean flow or which composition at the fillabas glanet interpreter between Mean and Merca available tam everlaps of the Neo cathon panet. The status and the angles in the scheduling status of the mean of the scheduling status of the encode of the scheduling status of and the scheduling status of and the scheduling status of and scheduling scheduling the scheduling scheduling terming at the scheduling terming the terming terming terming the terming t

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What is the kincton of a gas such as methane or oxypoin into allocolohav? Declaratify such a question would rightly be condemned as elecological. If lot the note of sectors after all, toxically the reachamms of nature rolto look for rome purpose or design. But if her the alike of argument we assume that (a such does even then the question is no more idogical than convergent waves en



The selebroscope has carried up the starting suggestion that she earth as a primes is actually alway

O CMN

HER APPARENT



By Dr. Bernard Dixon

A counted the solution of the

The body sisterion, which calable sidently with a count land of modern neighbors, the second land of the second body published enough calable designs Second and Alagone Southon (Minan and Malace La), A Australian D Bedelation, he den Calable Second Calables, he den Calable Second Calables, he den Calable Second Calables, and the Change and explanation to outer as experimental and the Change and exploration to outer as

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Why then, two Sheelen book been endonial by such notes philosophila of science as Anthur Koetler and Ser Karl Popper and by Nobel Phas-wrining molecular backgarls CP. Howard Term and Photor Medaward Valian and the sciencific establishment has basin unwavering in figoesen cot good of his way to exclude peternai ontes: On the contany his book shows all the built brachment works.

Steele hear not been clammed without a

h sering langely because he bases hat heavy on the traintice shiftee of the means waters. Scientists have long been beitbodie to beyr skill at governing beitbodie to teyt of an situat encless beinge of longer miticality. Solwhan Steele echas a galantitie orginationbeen when the explanation-he insafet

The roles of the center of immunology at the Hole care world offer anmals is produce an astronomical range of adjenent embodies. This prochadly waich against no chird dealese care process of the chemical industry? It bake as assume adjentation and another process of the careful of making antibacture will be careful of making antibacture at the specific of making antibacture at the chemical frankman of yet even been chemical frankman of yet even been

These seem to be just two possible mechanisms at work here. Foreign sub stances either instruct cells to fabricase particular antiocdes flor example



Cattarok He may been been right after all

they might implicit their patterns on those outs, taking them the complementary shape of antibodies to produce), or they select antibody-making cells from a presenting calating of possibilities hardher is as approved ormotoly.

Failing user sector 2 monopy behavior and sector 2 monopy apparently solved to engine the soparently solved to engine the solved geted that the walkers and exectors we observe in appatitudes of monology. The end to behavior angle of anti-ocomeling oppositions. So when cometing simulated und have produced in the sector 2.5 monopolity of the simulated und have produced in the sector 2.5 monopolity of the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the sector 2.5 monopolity of the simulated on the simulated on the simulated on the sector 2.5 monopolity of the simulated on t

For a white overyone was satisfied with this explanation. But free holiopatic began longerize that Burnel's theory data treatly answer the cardial question of how immunological diversity apopents in the first place. Where does that catalog of information come from?

This is shown to the provide a packation is the experise place and packation. Is a experise place rate is a participant of the place place here a place base of the place place is a participant of the place place is a place base of the place place is a place base of the place place is a place base of the place is place base of the place is place based on the place is place based on the place is place based on the place is place place in the place based on the place is place place in the place based on the place is place place in the place is place in the place in the place is place in the place is place in the place in the place is place in the pla

That is fundimentally a Lamarcoan proposition And this straightforward pedicators that can be tested, which is exactly whist Sales is doing. Also a long and bitte battle to debutk Lamarckian theory Derwinsto may new have to settle for a compensative D ATAC YSM

## SPACE

By Brian O'Leary

n. June 20. 1006 a tam-esquare borb explorate at an esquare and tampents above the profile of the set of language. Some a files topole and transmerse school over an attentio topolet on teams failed region to parter was incoked fail Shock water topolet on teams gathing on the parter was incoked fail Shock water topolet on teams gathing on the parter was incoked fail Shock water Studies of the sound was distancied in Studies of the sound was distancied to the sound was distancied in the sophetion released as much energy as a creat in-vicent borth

What playeed #? Plobably a anal come or an exhibit come tume disterted. The loose apglomeration of clust and los probably B5 mellers access and weighing 500,500 toos, exploided in midlar with a potential for destaution far escreecing 1 000 fellino 28 values.

The teer that this sort of thing will occur again the observe in mainstay of formatic sources taken (phaw posision the move Measor of the drive apastite) 11 moves debug to the drive apastite 11 moves debug to the drive apastite one the server (b) that a bat in the weak that and the orbits and conset that explosing the orbits and executing in the catalogues in the base of the server that and the orbits in the orbits of the base many based to charging baths a similar based goology and the evolution of the orbits of the

The motion is sure sample of automatic Ministee, Macrolia is an example of automatic advancement in a coupled by the instead - should also also years ago of an is non-retri automatic Skib to 100 meters across and weighing avviral instructed the sample has no signalized in the many others might have signalized in the second support and weighing investigation of Mans and Jupint and weighing the should be a new particulated.

Our oven less frequent very energetic categoristics with Bach-september categoristics could have had a protound influence off the exclution of the Biofestry Model bauerele Louin Alwaise and his coworkers have found that some charp sea interstores contrain unensectively both encogestia of platnemand indum. secogesting influes of existencetral material. Some deposits containing 30 to 50 nm etim te normal level of indum date to an event 55 million years ago preceety the time of the Cestacosca/ Testaaly extenction.

They suggest that the impact of a lowlikeneter internation would account for both the asteriors and the indum. Publicated in the international by the impact would still and be definitioned would would would and be definitioned would would reported both grain consequences match exponents both grain consequences match quite closely the extenction observed in the patient body is records.

How adurtant air these barn appropricing adamsobs with how hinkly are we to gath th? We can work out a good examate by combining the number and size of creaters on the moon with data co. The 50 Earth approxichers without orths are known. There are providely at least 100 codo such adressos with demeters geasast han 100 meters and weights if a



The analysis dealor owheater?

mittentions or more the basingures may be half those estimatos or double them but they are packably no further off Cleanly there are many close-passing asteroids writing to be choovered—and waterg to catafrinto Early

Is allocated come as no surprise that Earth appropriationing asserted simply be the parents of meteorities that lend on Earth Scientists who study changes in addroxida offset have concluded that result/all the parent wai seen will advirtually of the Earth, Yenue, Mars on the moor Mostion there events will occur over the next 10 million varies

How big loss a metery free to be to cause harco mote scale of the 'Urgasian aver?' How often doot his happan?'How many lease would be tob, and how much property? Binal meterotas are more common that large-onar (more Tah a lon of material big and table on Earth-every day—not encupie to base any wyterie tracks) What scale are more leaving to be many wyterie tracks) What scale are more leaving to be many wyterie tracks) what scale are more leaving to the area to the scale of the scale on the metero of the scale of the

The workshop scenarias disagland on how often a Turguska event might happen because data for objects of hall see ken way searce. Constitive bodies that would explose in the atmosphere may be more common then sold bodies. Soil is possible that we could have ten megation events every lew decades.

Phoneital physical field layfer specilated on the losses that world result from the impact of a con-informeter asseroid an award that befails Earth every hundred thousiand system of so the drivitiened clevestation for greater than we

# MIND

By Morton Schatzman

checkerboard pattern of the scener awenori isel' or ce a second Floritories on Ruth's scalp showed expensioning a reaction called the visual

were interested in Ruth a visual evoked claimed to see appartions that looked as appartitions did not have the insubstantion quality of ghosts or dreams. Ruth said they people would Their feet were locially apportance would be investigation sometimes making relevant remarks only well They never simply variabled

For Puth an American mother in her \$206060CB

We asked her to create an appartion her eves Ruthhed acquired the ability to them. We had taught her to accept and control to test the effects of the appantors on Fluth states

While starro at the nation Rult magined an appartion of her seven yearold daughter Heather sitting on her lag

24 CMN

clutes 15 cellers reversals was averaged

said. You've produced the appearance of

We repeated the experiment several times. When Ruth said her daup?ter a head blocked the checkerboard patient incompletely the visual evoked tosponse was reduced but not eimenated. But s osicilioscope showed her visual evoked response was inhibited

The nice that the electrodes car tail you

How do you make an appendor?" Peter



1 stop peyro attensor to everyfyrx looks like as most people do with their And I produce the person

Where did Buth's brain intercept the when the annerhous out in the way? Way har rapid, the light-sensitive surface at the electrical response of the retiria to koht. ever When she had an appartion cover

the brain's perebral cortex where consolitatives and will provide We now evoked response to light had occurred after the light had been tormally

Next Ruth sat with earphones insteming

footstwoe and sometimes of clothus appartion left a room. She also allogoth and an appention spoke saturaneously

The circle Ruth heard in our test are a brain involved in heating. Peter and I

can their them? Peter asked He showed

# BOOKS

# THE ARTS

By Robert Silverberg

In the last key second status is a seal consumption of the last key second status and the last key second status and the last key second status and the last key second balance to the last key second balance the last key second balance key second balance to the last key second balance key seco

Hendcare tesed in Bottom imp Grauge Press alarings to the multiterinded angue of Listinstored Registrate and Heightsh Corporation — si lact Bragg does not work hard to publicite. Some 30 to 20 books a year topper under this Gregg ingoint Provide Names in and instruction publication of the - 3500 as a typpical downce for it hmore meanwrites who drive down domains and home papertanck comparises, needs to have Greggin growth the books

"For an author to see his work it randmusted from tomporty like percent editions into appendit, strong, and duritable editors: single moviel Philip K Dick is the dream of a feature-beeng the superior (engg) Press editors of my movies and droy objections gives me the impression of the superior discussion and the superior discussion of the superior discussion of the them a support of circles that one day well are the profes of my boostatieff and would be even had in continent mathem?

Andre Norton, whose seven volume Web Work seven has been Grogg stop solar at 550 per set says. "Detanly I em very proud and pleased that my bless have been gatherwelferte well designed and undernisate, and I very much appreciate the chance logister my work appear under the Groga tream."

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Pest-cover of Greggs best saler Wach World

glasmo on the bodiohell kick some impasing niveleenth century collected works. And each titles accompanied by a well-titowe accentation model on the well-titowe accentation model on the whore the some such essays for Giveg and Michael Bishop, Agra Bourys, Joa Heidensen Barry Matzberg, Michael Meenzock and Norman Sperrad

The Gragg program waik born 1972 and Thomas Bole and Article New York Harhest Is and an Article New York Harhest Is and more than the Article New Harhest Is and a Charlot Article Article Harhest Is and Article Article Harhest Is and Article Article Harhest Is and Article Article Harhest Is Article Article Harhest Article Article Article Harhest Article Articl

The engraph engines at the Oragin end of the Oragin of the Oragin December Centry of the Oragin of Electrical December Oragin December Oragin December Oragin December Oragin December Of the Oragin December Oragin December Of the Oragin December Oragin December Of the Oragin December Of December Of the Oragin December Of December Of December Of the December Of Dece

We fizzen L cossec republishing early classics," Hartwell aliys, "but we va costauro by free 18 FILM

### THE ARTS

By Jonathan Rosenbaum

peoplicing on what movee of the future will be like if there toget the obligging needs of autoence. A chu cal part of the change can be detected in whate we see moves. According to present spits. Causting party call that mosted the firms well see will be either in homes or at dhogoning make

Once inside a mail shoppen have fee doctance to make the registre Gotten. 5.Sense recently noted "Contensise kapt to a minimum to the customets will flow along from store to store propoled, as the dowetpers; say by initial imagy. It is a doctorepoint will be served recent move blockbusters—and others we can expect to see in the future.

By contrast the move houses that traditionally orpged up neet the centers of towns – public gathering places not unlike the municipal squares they were often adjacent to—are quickly becaming restailing eminame of contrar and

Shopping mails meanwhile are sprouting virtually everywhere—maility if seems on the cutskins of towns away trom these old centers. Their overall rate of failure during the past 25 years in said to be less than 1 percent. Almost half of the rotal business in the United States currently takes place in them.

These 15:00 strp and enclosed com plexes--stop input as glazar and ontens - represent only one part of our move Via to come it same pubblic has n even more substantial portion will be represented by what are watch al home on wide occument.

The advent of cable 1V and closed cropt brome vice borns how usaining and mail viewing toppher in a number of thing ways. In recort years the U.S. Supreme Court has lands a number of places where observations and have compriside logoes ther vices of hand out leafts: One-mail expert. William Several Kowards has streaded labeled here the Reudal pasties of contemporary America.

By keeping weather out and keeping total always in the prusent — if not in the future — a mak expires to create traveless.



What are most bay movies toolay, after at built models of Horbissis, solvating mail design—channels of automatic divident definities of the products are of the end and official charges are lead to a minimum? Michael Herr is Dispetitives and Josh Michael Herr is Dispetitives and Josh Michael Herr is Dispetitives and Josh bookstore, the Dispetitives and Mighter in the report shop and noise beef Xenge with the report shop and noise beef Xenge with

amising is the period-reference and heating with meanstatic Quality Macro and Jaio Andrews in the swarting applicable and the the channel department about a histocraphy that per and table there allow a histocraphy that per and table there is a period of the second table there is a period of the second table to the second amission mptimate at the and attempting to reservice exchange in the strange table and there are a last beginning to reservice exchange in their may will practice

From one port of view the Star Twa media recordly locatured at McZorardi a harriburger franchases can be seen as a plauable astersaon of consumer poolet power collaborating closely with stropping-mail makesing strategats. But mexus and mals locky are al-inclusive enforces that bank to impose a certain unitoritie yearywhere

Thanks to secant inulpids to his between newskis comes. If yourgame, togs and burghers the perturbated possibilities have become virtually infinite flow are sear the book. Bits used to crow invariant the mouth. If the future thay accesses the newskish the book new and the book. This is made that the book new and the news' and "Rouve of gesterd new may in any good to this Fahre?"

Tharies to convenient one stop shopping, no fusis inobother Betore we know in Big Map mey sum out to be Big Brother and Star Mars. Part 6 a solitary video game that we project on our own rehoseelectric we leave the house or rolo Q



Stepping mail moves setting down in the value of Missan and building a ovviauon them 26 OMM



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THE RUSSIAN CONNECTION

### UFO UPD/ATE

By James Oberg

or the past few monthe grocery shoppent serves the Dinied Statis have been titliard by barner head inter in the National Engineer "Oppose UFO Dates tants, one proclemes. First UFO to Inflict Damage on a City" Wilson the Moon when We Landed. "UFO base on Saturn Moon." othess intraces.

The manotosen UPO movement has bod the good series to gnoce these sensational claims (while claim trusting the sources on other matters), but the public may well be vendantly guild what is going in Fee poppleration that these updates can be known afront these solutional can Angeles and Themacrose hait a verth-or Maccan

UPDs are a sensitive top in the Soviet Union Such sensitionel headhows would never be particle these. This government of boally derives also weathors and blames such toksow with some pathos—on. Weather yellow journalism The Soviet public however, edgerty devous SUF runnos that rank among the widest in the world, and in practice the togine appears to tolerate this as a rately value for devlopical distent.

The pregning call of the Publish ublogists is Folio Zogi in astronomy leduer at the Nericow Awston Instate Zogi has writen popular books and antolison UFOs, on a Soviet logfoot" in the Geucasur Nontlines, and orisinitai the Sociasur Non-Sociasi and the Social Social Control Control (Social Control Internation International Control Control (Social Social International Control Control (Social Control Internation International Control Control (Social Control Control Control Control Control (Social Control Control Control Control Control Control (Social Control Contr

The basis is both of the offer offer

Aloksey Zoldov a provincial unreently professor enfluctuationally toutil this ideal that the Linguista explosion in 1908 was a spaceship crash. He has vowed not to those his Toatoyan beaut until the world annu he's nort. Zoldov is also into body.



A purported align craft start during a pask of UFO activity over Savkowland in 1975

ausas, faithhealing, and altering the speed of wristwatches held in his hands

Two physicists are also active in the USSR's UPO cut. Viadmin Azhanha and Sergey Bozhich, whose speciality seems to be embellishing foreign UPO reports and tobbing them off as Russian originals

Hepotici term these Hossian of the assist — Western newstreen and only photo to find Research within to tak on the neard highly could be by Western utocauts when they approximately and considered highly could be by Western utocauts and executions. They are not be research constraints and the second second Henry (Sins (patroancoad Gree) of Los Appress Gress an exter for the tability with IDS and conservative and near the second second second second alming with IDS and conservative

Gen steerne to quefit the fluxeskille with additatival accounty but the balance bear with natuly the tood of adjoint fluxes in anthrough a start adjoint and the start of anthrough a start is and the start of physically. Check then into "top Austan societistic and "teoding fluxes in physically. Check the information of the averts successful account, the averts successful balance. The averts successful balance averts successful balance.

Then UFO stokes are as qualitoriating as their revelential. Table for earling the flying statucter attack on the oxy of "here to be the table of the oxy of hasocal biogener bermeetd in on Acri 18. 1970 With the stoke of the oxy of the flying status and been solved. The source of earlies autofield the source of earlies autofield the source of earlies autofield the source of poor

The Russian populace could never be given that explanation of course, and UFO butts in the USSP1 rusthed be embrace the case. "As far as I am concerned, it was a speciestry from outer space, carrying of accounts sectors," and formathee

Zolstov declared. "In my opinion, the object was a typical Bying seuser. The available reports letting doubt whatsonivar about that in my mind." Zipplagneed Without a doubt, The said in the data the features." And Adhubha was more specific "In try donient, what was seen dust Petrozavodsk was other a UFQ, a carrier of high moleymean with prive wird passengers or thesis afheld of energy created by such a UFQ."

The field of the physics mains sublittle (C) expects LFD (C) beha Sum 1. All of 7 physics and 1. All of 7 physics of the second state of the second state certain ghi allows out physics. It denotes the certain ghi allows out physics. It denotes the certain ghi allows out physics. It denotes the constant of the second state of the second state certain ghi allows out physics. It denotes the constant of the second state of the second state constant of the second state of the second state certain ghi allows out physics. It denotes the constant of the second state of the second state constant of the second state of the second state trade-output state of the second state of the second state of the second state of the second state the second state of the second state of the second state the second state of the second state of the second state the second state of the second state of the second state the second state of the second state of

The Apple UPO table (Alient on the Micron kine) We Landed 'September 11 1973) went through saver alimitatimorphoses access the work? Anathre was the mark insures for the Macanial Expanse ratery of a NASA covering, approximation in angle total or menion-that the late of approxasts secretly photographing frying saucers on the moort wait derived lism a Frinch book by Maurice Chatlekian published here as Car Ancesters Career Ann Caver Searce in 1978.

That book in turn was based on fiked space pholos' relaxad in 1074 by the Cosme Beetlerhood Associates a firing UFO cut in Japan. The pictures were longed in order to illustrate an organily caradian hoak which was so mansparent that most UFO groups in North America meetind in 1980.

Each of the participants in this final added his own personal louches to the doty. The result was a family of derivatives, which the Naboral Engainer presented as independent, initiable multiplic accounts.

Bodynch s tartabase reached a new oversner in herodinsert stayn, UPD flager on Satari Moori, publishvid Sowir obgenvalnores had mostomad alarn redo seprale. Ther origin had been priportied her added by redok hat had bawds Satari. One of the regul coefficient acts was the tagebory of the Reforement of the regulation of the Reforement and the second of the Refore

Cynecs saw that Bochech is planne were either timed to cash in on the specialization success of America's Honair Saturn proba or were a reaction to the suggestion that Russian radio intrafference had scrambled NASAs data on Tean Saturn's lagest moor and the silegest data of the UFO base. Thermore guitatie UFO buffs rid not

Standing opposite the USSR's LIFO rumor factory is a lone Soviet official. On

Vacime V Mapule, of the Academy of Sciences knowphene Physics Laboratory He job otherably is to catelog incoming reports and coerclinate Soviet research He apends much of his time trying to readgare the Russian public — a hopeless task.

The case of he Michaectik UHO has been expected of diruk to CM Maylie Tile dates that if could have been if two UHO, but sites exclusive sections factor hit to announce that twee a Soviet mickay species per of Maylie to a Soviet mickay section and the section and the rating but sovietic memory protobent announces into the site section a case of the solid sections section a case of the solid sections that caver a larget in ALEO KOB cooters

To understand the Russian UPO come we must approximate how what the cost of characters reality is Russian nerves are specied to oddy—and ses so attent mesoperiad by the Amenican pross—that few ploople even by to read them. Hence received costantion on one the false

 Soviet observatories had montored alien radio signals, and radar used to
track ascending UFOs had pinpointed their origin Titan, a moor of Saturn 9

intervision shat an entire generation of "top Russian scientists, is being turne test/lying to the reality of UFDs.

Bemainber that the tablo dis are only recycling the same herdfull of docume Russian UFD entrusiants initial time the headlines schema about tam Morcow Chantos are twill have seen those hannal samewhere before

Back on the sade of the hert Durian Drawings of UFDs reported over the last 30 years show almost as which a steady filter each UFD prici has his own outamizing ist or the UFDs in the words of ublogue Robert Sheatfler, "are made of Silv Puty.

Or maybe the humborks of UPO stretches on humborks and you what here known as an inters the support of Dr. Richard P. Hanes a research sciential at the NSA Armis Research Centary naites Pracesson Hennes, author of Observing UPOs pleasaming, Drougo, 1975 of a specialist in visual parcegion and accentric consultant tion the Center or UPO Studies entities. Among the Center of Dro Studies entities Armit Phenomena Research Organization

Hanses belease the LPC phenomenon must be sublead scient/holdy and he reported ane-of-his most faceneting experiments, a study of LPC purception, all aspecial sometime materials and Antonasaco The experiment wide a simple one Hanses ballow LPC exercises compared the mesula with UPC disampts beneased which and new mon

Oddy enough imperial judges couldn't tellite akaizers apart. Drawing from the two groups had the same general testuas, and those from people with ted information and clottal as eyewhoes enderings.

"The similarity of the drawings." Hanesbalewa: "suggers that these particparts hold a terrestyped mage of what a UFO is supposed to look (like Almost everyone has seen a photograph or drawing of a UFO as some time, and the memory strongly rifluences subsequent drawings."

But shouldn't someone who has actually seen a LFO be able to give more details about their appearance then people who have spen only a pictual? You'd think so

The thirdy sign is networking possibility sugged that there are any any procession of the sign of the there maged is UTC out of earth which the sign of the there is a sign of the there are any sign of the sign of the mages called the sign of the sign of the sign of the mages called the sign of the sign of the sign of the mages called the sign of the sign of the sign of the mages called the sign of the sign of the sign of the mages called the sign of the sign of the sign of the mages called the sign of the sign of the sign of the mages called the sign of the sign o

Hence tops that the amogury on the secience to preparing recognition charts encoded to preparing recognition charts encoded and the secient charts and the amount of the secient charts and charts to compose the image they recall end us a common where to build a picture of the common where to build a picture of the common where the build a picture encode sector and the UPC have already been that discussed. Such a search a concount may differ worthers.

"It should go without teeling." Harree concludes, that more research is needed on the basic perceptial processes." Such research should go a long way toward demostrating whatewill or not many UFDs are all in the mind, after all

The pay is a fibereasisch werhaufy presenthal consoling at those unit in all probability impede rather than rossterate the process of the acceptance of LFOD by transformal sciences. This is because the othersproved by those strologists already champoned by those strologists already endostaments of what subsequently endostaments of what subsequently angli conjug by account, not by ther own meth OD.

# CONTINUUM

### MUTILATION MADNESS

or would you feel if you heard that a forstrail genrey denote a forest allower a table government, and a U.B exister hall sended together to france a sense study not the waithyoit Barta Claus And what if the earby constuded that Barta Claus doesn't cost and then the sense constuded that Barta Claus doesn't cost and then the sense of construction of the metadapater?

We considering why parametricals and Palipointo The Law Microsinectory against 1980 cold in all semicer to one of the comparing over outformulations. An appoint in choice and a theory accels against the aphone to one of the theory appoint, or dhe interparing output in the microsine model for the appoint, or dhe interparing structure to one of the interparing appoint, or dhe interparing structure to one of the interparing and the theory of the interparing of the interparing the microsine the sound is dherear the same of before one of the appoint, or other the sound is dherear the same of before one of the appoint on the interparing of the interparing of the interparing and herear the same of the same of the same of the interparing the thy grant and under the same of the same of the same of the same of the interparing same many same of the same of the same of the interparing same many same of the same of the same of the same of the same many same of the same of the same of the same of the same many same many same of the same of the same of the same of the same many same of the same o

Like any good pap. Hommer has biscovered the tecketsy of the representation. For its most park, high encouptes buscards, espa were Caused by and Islaty opression with what can and a superior for with memory technical, high encouptes and a superior for with memory technical, high encouptes and a superior for the particle state. There are found espa to the superior for the particle state in the superior of the particle state the superior for the particle state. There are found espa the superior for the particle state the superior for the superior the most base are to take the superior. Rommel werd to basepta that multiple will get the bases.

Immodeboly following the report the Albuquengue Journal compared Rommel to Posterd Nacon decorbing both as former federal employees who "subscribe and give currency to the function that the news media can or do, manufacture news.

SH the pathematiliaan notion has been very much the product of casteless acceptance of semialantialistic reports from unvehtible and biased sources. Advocatise of UFO invasion and other fraories. Nave pleat lakery on hyperbale to present a brazine protocol castele et landy press with source parts "sourceally nerotice of castele et landy press with source parts "sourceally nemoved and no traces of any agency nearby that could have done the directs Lack of animal tracks cancesses dramed of blood and want kinits at the size bean traces been being as a

But Remain law these angles away by boling canduly not but design cases. First, he call the processor of the allocations was grady, anagonated. The edges of the worket elowed district team manage, and description had introder the away over One another next to movime the next table of a second second to the second second second a superommer cases, and thermer that "is control and they do it with knows. Remain cases of a second second a law do a with the store it on the second second at they do a with the store it on."

He frand hade agelets of contemp precision and covery ere. Disperjeg transcovers and busicadis, which are inverted contained to collision of both dimensions wat also because the provide of the collision of the contained of the block services to get a both frank or contained to be normal provide of popular of both fueld exciting the mywrite the read Block concepts in the lower parts, or it is contained by sciencing the as a normal process.

One makages, he retent was transfer until or util Orienteel due to sociations repaid allong enstativity of priori. Newspaces faint to investion that the aurora benelie that in ght had been exceptionally begit? Another specific due to all that been exceptionmatiked likes it logs was broken as a navel, of a door toes one automic and. Pervine suggested that schert he logs had been able to the been transfer also have the two prior been of the Another been transmission in the transitione.

But Benitor Schmid tensors unconvinced While Rommel has wearmented that in Suther public funds tas spart on the matter Schmitt east 11 do not truck in the investigation ( can be used in signal white study. He rejective Rommel's inducing that there was taken information in official reports term in an offician Schmitt profess to wait too the security from a forthorm (FB) enclusion terms being registed at the security of an antist study and the security of the security of a security of the security being security terms and the security of security of the security of the security of se

Bothe close has been left open for even more reports of multiboos. Tout true believers should concater on their question. As Kan Remittel askad highsters when he showed here a group protocid one best their process operation in which predictions had fam askat the gen fait region of a steet. How diyou is of had surgeon does a sevencheme on war. — AMMS RAADV

### CONTINUUM

### HOTDOGGER OR



-Mark Torney

### MAKING DRUGS



#### BIO-SLIMMING

#### UNDERWATER RAFFIC JAMS





in many nations to make

Lyears Experts say those

- - -Angramous

### CONTINUUM

### FIREWHEEL

For a few minutes this summer is green moon will light up the right sky Stightly linger than cur real moon this enthicsel green one will actually be a big about of barsen.

Part of an international onal exportment call for Freehouse the green moon will material call moon additional sectors of berrain gas 56 COD kiferrethe abate the equator As the cansters explode the sam single will begin above gifter gas Bureng it a pair green

If will be the first time soentists can drootly observe magnetic hald times in this area of the earth a mapnotosphere. The barrier, like the earces borwais closer to Earth will denaity part the magnetic lines, making ther walking In addition is small eater hav, designed by scannais at the University of Galifornia at Behaviey will full intough the doubt and measure both the energy changes in the benum and the few of place mas that concert galaxts

Valuable information about not plaamaa may ba galhasid builting galen moon is essentially an exploratory hast-finding affort and only on part of a larger explorment operd named by Germany is Max Planck Institute for Estatement of Physics

The exect case for this astrophysical sky show rai dispendent on weather conofficine. Usit when it his preven in whould be vesible across the online United States shortly after same

Time is the longest distance balween two places



Support in Annual rise a small On verity of Challonia sacette that will by through Facwheel's grean moon of bancing pag

#### WOMEN AT ZERO G

A mergar of the woman's movement and the space program is memory soften interesting diemmas and uncontamines. Because of the space shattle which we carry both men and women attoard, NASA is measure and society. NASA is measure and society of a multime operations.

For ecomple, research indexates that the shring or blood and fault beinnon de ing mensituation without the tug of Earth's gravity could cause come comoem according to Jerri Brown of the Johnson Scene Center in Houston

No one yet knows. Mrs. Brown says: whether the body can deliver the monstrual flow to the convex by contractions alone or whether is tempor can action orbit, check the fine

However Mm Brown who has analyzed a write range of female human factors obnetivates, "No major unobliems so far have been identified or isse expected mat would preclade females fort versioning into general

But after recommende a closer attention to women's bodies in the design of space vehicles. Body sou, poettre report and por acutary strength needed to operate equipment and hards doors call for new criteria when moved space loarne fly.

How about accessories for Madam's orbital bouchs? Leisure bras are in while gardies are out

This is one of several indings reached by Brown in surviving 22 templa excinnant applicants Women astronisuts print a women satronisuts print a with sheetch to accomisiodate zero-gieffecture and text ingo. Gittlikes are to be left back on Earth. They rearret must able historial forwarts.



Female astroceut in training Long hair and girdine are call.

querty-free environment

Persional of leg pard undersom har is basically cultural. Persale respond onto could balance symmedays of has growth although half vaside call for charing provisions on a 30-diay mitmeon

Long, foxing his may be out of place on epice tinks. It might get oxuph in scientics equipment or ar locks long har has a tendency to hast have in zero g, as it does in a swmming pool

- Leoniard Devic

The trouble with some all made man to that they vorship their creator?

MMG 86

#### SOLAR PAR

If a labelaufield, surray days for golf and you re not doing body considering your handiciap. You re on the grean in three, and if you antik the purt, you'll break your record. Behar yet, if you



A well placed shadow can out a similar of unur handran

onk the pult, someone else has to buy the danks when you get to the dialithmese

You gove the ball at the .R. role at range for the sup, then stops statisting on the very edge "Nur buildhese baget to another You annile and hold up your hands to indicate the athol is not over You position yourself as that your body shades the ball tout the sum. Referenceneds go by Thisty Alter a minute there as a tible movement at the hele and the ball drops into the sup.

Whill hippened? Perched on the edge of the hole, there is nothing holding the golf ball back but a few blades of grass. In the direct surficht The metabolism of the grass is active, the blades are att? When the sunight is blocked the infelabolism slows and he grass 'release. Linsupported the ball role into the cup And someone disc buys the dimits — Nick Engler.

### **REUSABLE FILM**

Thanks to the soaring trice of silver in key ingresent in many phetiagruphe processes the price of film and photochemicale has laken quantum leape in is pent months.

Flowever help for shuttribuga may be arriving from hel USSR. According to an hel USSR. According to an hel USSR. According to an help and the shut of the service of a mussible pho ographic film.

The new fitts is made from film layers of hermoplastic this plastic becomes lightentitive when an decide dourse is plassed through it for sing the poture with the unrent on, there went for a singlative this device. Eyes fron 1 like the poture single shall the thermoplastic to simples the million at pool income the million at pool .

#### AGNETIC SMOG

High-apped trains may be subjecting their passecgars and others, to autile ophewor effects and even clausing them to fail asleep Among those affected are our leaders in Washington if a Starford University msearcher is correct

Hadio scienti d'Anthony Fraser-Smith has discovere thel such train systems as San Francisco's Bay Area Rapid Transit (SART) and the Washington, D.C., Metro axpose people up to 160 kilomotors away to "mag nelic smoot "

The Partil dat of auch sysbens says Preaser Smith acta as a huge anterns that proadcastic una-toes troadcastic una-toes troadcastic una-toes troadcastic una-toes troadcastic unations shall your brain can doling acting in your head and the signals it is producing dest, as preaser Smith

Success have shown intro a langer when poople are as posed to 0.2 Hz failed, of which BAYTs is strong source. The Russians have doing a tot dwark on this autospeak of beins ultra-low traduences are todopcally active. They may make poople list drawing and produce sight changes in the lobad? thenk they confuse the brain a little bit. If thenks it should be asleep

The done about all can be measure the felds here and point out that they're present i haven i had much access in intreasting any one to monitor the effects But i thisk is about to be priority cancers. The Washington Metro system is anniar to BART, and we here all these important people there is pared to the "---AK".

Since (10 md foreare http: atomo creaty is to be a presize occore for a long kme, 1 have to any that for the presize of the since of purphase, is a well that do intervalse the human race intervalse the human race intervalse the human race intervalses well well. Business well. Business well well. Business well. Business well. Business well well. Business well well. Business well. Busines



EART The highly charged shird rai can act be a piganto articles, shares down preside markers have and seen output them to share

# CONTINUUM

### POLLUTION BANK

In a small Maryland laboratory a few dozen samples of frozen liver bissue prolikips a new ers in the



Oterest nervez samples for load repage/lisear

study of poliupon. They are the stain of whet is hoped will be a national bank of inveg besue, to be compared over time to proposit environmental changes.

Until now Sake othernical concentrations in turing have have be in recorded on paper But is before detection methods uncover new chemicals, thore is no way to find cut whether—or how much—ther leads have chemped. The orginal Stattofor no bapter resit

The national bank would enable scientistic go back to old ar frozen samplies and introchy compare fiscases in different geographic regions' both for seeing and newly discovered hoasy misfalls and base chemicals. "This would produce a bellar scientific base for public policy questions anti allo help find out-whether innxonmisfall base set doing any good," says Carl Porter, of the National Porter, of the National

NBS sciences and year cases year logare is beyond case program. An ideal largely of the U.S. Encourserate Protection Agency. The Notee solution Agency The Notee solution Agency The Notee solution and the Notee solution and the Antimotor lab cognitions invivie goldworth, which Antimotor lab cognitions invivie goldworth, which concentrate and concentrate solutions and concentrate invivie goldworth, which concentrate and concentrate planates

Tradue stimples are finalen to -190° C Scientists hope to davatop tach reques to store the samples up to 100 years - S D

### THE MIDAS TOUCH

Nucleer physicists have lamed the deem of alhomsts into waiky They reve changed base-motal mb gold. But there is a cooth. You need \$15 million worth of equipment

Monsey and his callistagues were't hyung to Deal the high phones of the interrotional gold market when they bombanded compute with lange, highly chilinged stome nuclei Stating closes to the speed of grit. They was simply common out before research In nuclear acknos, trying to find out how the nucle of aliams are held together

had certain advantages ow their flexibility protocols isos: They had a guert area manafrer (EEWLAC (Dirlon Exection Vert) Synchritory/ Linear Acceleratory at the University of California's Lawrence Eliniariay Laconatory and they used bearuch instead of each, which of Course had been preferred in olden times

Bernuth is, approachy spoking, awaier to golo ' and Dr. Morrisoly 'Lule gold, it has only rare cologe that is stable against inucleacity's who have protone in 4 macked, who won's protone in 4 macked hins gold ' Moneing hard he was ' protof y cour has fearm excuto succeed in hitrop agromments

using from 4.8 billion up to 25.2 billion electron vota. fre scientists boarned argon-40 and noon 20 socopos stripped of electrons in order to accelerate them, at beamath metal foil targets

Manuseev reported that although no new endumknown tortopos of good were observed improvemarks in sequenterate techinques might produce some The active transmission of bestruct to good was desoneed by Momscoy as "traval

Equip hant costing more then S15 million would be requeed to produce less than one billionth of one cent a worth of goold. This oow owely so make goold "he coscluded — Physis Wolfman.

Problems worthy of attack/ Prove their worth by histing back

-Pat Hon



the BERKLAC Machinery costing more than \$15 ended a required to produce less then one billionth of one cents worth of pold.

40 CMN

### LAST LEAF

Enviringaned species of an imatis have acquired hordes of protections in record years. These see dozens of organizations willing to hight for beid explose or shall clarities. But whild about endangered plants?

Literally hundreds of prior species stand in immanent damper of losing their last leaf Unfortunately, there is little publicity for this side of the and angarad-specess peoplem

For example a recent Oregon State University study indicates University study indicates intent 400 plant spectrus in their extinction. And an Assense connotion. And an Assense connotion. New Masses, Texas, and Lish, 21 species ad to the point of eatherston of cactus are being upreent ad to the point of eatherston. Other U.S. floaten danger of teeling the last mys of surlight on their chicrophyll include Taxas wid head hord. He Wigna sound-teat brick the Markinik wid broad bean the furbish busewort and the Conta Costa wall kover fromobily yet another plan wheat to show the last

Human beings are monibers of the only species that poerespect the capability to sterfore with its own growth — Enter Parks

### TALKING WHEELCHAIR

Victims of cerebral palay or shoke and other disabled persons who cannot speak clearly if at all, now have a helpful now gadget a taking wheelchar

Developed at Stanford University's Children's Hop-

Polyals d in the long list of and ingenial plants are 21 species of GACNS which are being upropilied to address by collectors pital and funded by the NASA Ames Research Center both in California the device feetures a computer word processor and a sciench synthesizer and volumes, and can even be programmed to stockpris complete sentences and phrases for fater use. An expart operator can turn out impromptul, as many as 30



Equipped with a word processor a computer and a vorce put of an SF move, the talking whise/chair gives speech to the handbaceped

mounted on a wheelphar

Usersing a switch or shift a poysick or pack at a hypewater keyboard – dopanding on how well hey can move – lo string logiffer words and sentences or a Walce screen Them hey activate a mechanical words lo daiwer the digital message in a morecare like the computer IACs in the move 2007

The clevice could confer millicial speech on the 1.5 million Americans — slich se deal mutas — who cannol speek understandably

The computer stores 925 widely used words, follows 900 grammatical rules talks at variation shoulds, rulestarks workthe a menual r

Supportents tested the devector to a week. An elderly strates vicini, who charmose works what she wanted to say on note packs taked over the tabe/tane – vai the posthesis – with her tamby A young worken with a neurological disease, contrained these months after bearing a son, was able to speek to that son, now Yua, for the test time Her that words. Kerwin put your paymas on right now?

\* Not quale proved in mathematics is like 'not quite pregnant in biology ' - Howard Patree

### CONTINUUM

#### PLIGHT OF THE PANDA

An eminent American scientiat is rushing to China to equip that country's giant pandes with ractics. His obssil Sichuan (Saschwan) Province, one of these provnces where pancias live According to Schaller, Jurphsingly: Et als known (bout the geni pencia, a



Help is to the way for the gas's period above here exercising water on its fevores barriston, which is committe store off an measure

ject is to keep the species alwa

The paint panda, one of the word's more popular annais and the national symbol of China, is the focus of a newly formed commities of Chinase and Weaters paindle which protectly do not number amough that 1000 true been starwing to death bornious of a missio than 1000 tombor a major compoment of that deat

The American delegation to the committee will be halted by George III Schellar director of the New York Zoolog call Scotety's Center for Field Biology and Conservation. He will be the first Westerner server the 1930s to Stack and white residue of the basi. The first thing to the basi. The first thing to the start dust where here are like that after that, he added, the anyong particular may be that after that, he added, that and study the annual a other and study the annual a other and study the annual a sthodded is mouth be able to added is mouth be able to added is mouth be able to added in the start and added is mouth be able to added in the added added in the added in the added added in the added added in the added ad

The cle-off of bienclos that is affecting grant pandias affecting grant pandias once every 100 yeaks. The plants boars sould below they cle but the seedings take several years to mease from the benchos becan to die steten i yeans ago. He caractasse of al laast 140 starveel pandas hake been found Heav pandas managad to summe previcus bambos takues ver known but they may hake done ao because Pay hak a wofer image in the Plastocene or ise Age, prantas were found in mary paths of China and also in Burns. There range may hake been weder in hatoris time too

The gent pands, which can grow up to hav makes in longth and weigh as much is 140 kilograms, is an anmatiwith no close genetic relatives. Its Closed tellshive is the red pends, a small cal-stad creature of a diferent genus that lives in varleart genus that is in sin cas parts of Asia. Pereousy prieval of to be a kind of raccoon, only recently have scr analasis come to think the giant panda is reliated to the bear — Berbara Ford

It has to do with Aro we good pareties good sculptors, great post/21 mean, sill the hinge has we really wenerate and honor in the country and an paretice block in that scense the heat sculptor has all bo do well hand a country took has noting to do chorefy and do deharding our country took do has noting to do chorefy and do the and not sculptor has a sculptor scolar to hap realise is worth calendarios.

> -Robert R. Ween director of Permutate an readonce to Sensitor John Placone who had asked how ruckear societenitors contribute to psiboral disferse, 1989



Looking the inscense out of Attacks of the Seart Köhler Sealls, a 74-los lookium tank for the Clarch Rear Braeder Reacter Indexs is way deem it work to du attacing a loss de in Menghau, Terrensse The Clarch Rear plant will use three such adduct barks the largest over built in the Linker Reals in and Andre 2010 down to a loss the respective marker



# WINNERS

Sports' emerging heroes reach pinnacles of power through science

### BY SUSAN MAZUR

Here is a start way and the st



6We can surgess all physical limits Computer training enables us to see movement beyond human perception 9



says "The important lititios in performance - the training the relalive assends of dozens of limb and body sepments, the changes in center of prov-

through our computer training techniques

computer system de

ics for the U.S. Olympic

human movement," he

The future of sport, says Dr. Inv Darclis, of hands of science. Cosches will become scientists Computers, behaviorism bio perfectly tuned athletes New tools will usher in an ope in which human percep-

othere has turned his shoulder a decree too fer to the left or slopped a centimeter

Anel's better-Iten-fuman eye bogins with a campra that shoots an attilete a moboo stup to 10 000 formes a second. These high-speed images are projected onto a screen over an array of 20 000 advancely pen is used to trace the athlete's position m such photo frome. Microphones peck up that animates a stick figure on a video

Golf swings and other movements can much perner (inf) are essential for abbelic secolarce.

quence of attienc movements, which can

othere is center of previty velocity, appalarstion, direction, angle of attack, and force It gives him a fixed image of the relationship of every next of an athere's body to every studied and corrected without durawwork "When a swimmer is working out" he

says. "It is coach can itell whether his hand motion produces the most thrust, whether whether the angle of his arm entry gener ates the least essistance. We abudy the athiete in the carp. We test him in farmers with shrees pulleys attached so that we can groups the force generated by many differseries of motions. This we compare with the swittmen's working to best advantage and where he cent. Before the advant of computers coaches were merely guessing

The emerging science of sport will work broad social schemes to minute manipula-

sociology and made Marvin Clein, of the Human Performence "Wreacly," declares De Jakow Bistoke, a peychologist at City Univercommon loday among class, to assume that performance is about and oighty percent mental This understanding alone taplies a new kind of emerging athlete, one who stands much re-

the American bockey the LISSO in 1991 without a Diversio Groups

in athiothes. "However, the real impact of this shift to a more mantal, systematic apbehavior-control advancements so that

Both new scientists are incising for wave to assist athletes in elimination menta Hofstra University, in New York, is using D'Bren worked with boxer Duane Bobick hyphosis, discovered a seathing caldron of his fest-round handicap completely

prove athletes' "muscle memory" He be leves the athlete raise or fails on a kind of tions of barrayor II is 'a holistic approach intelligence that Clein calls first O'Breen a utilizing psychology as well as physiology, izealous supporter of Clein's ideas, says

There are no spots that issue of where you are needy coprimely industed. There are no threfers goots Spots are to subtion muscle memory. The negative response hald occms from machinemory because loading you for you fing to their about any from any memory of the negative three any second second point of muscle any response to the point of the any second second any make any response as the athletes indust networks any response as the athletes indust three houses any second second second of muscle nerve responses as the athletes make athlete to house.

Be else takes a signity offerent porcena the staty to enach frem the had sale latity cognitive and vice weeks as where the same of the same state back type, attribute from the staff. David the same prior by quasi-thereing stategy as a state to be yought a learned system to a same prior by quasi-thereing stategy as a state of the same prior by quasi-thereing stategy as a state of the same state of the same state with the travelege of where to also and the travelege of the same to also and the travelege of the same to also and the same state of the same state state of the same state state of the same state of the same

Even the physical rate of sports control will have a positive mental impact on althous New Iran ng systems that adhere better considering of althous allog paraale entermous confidence because of their scandid pressen and whenes The althous take are not simply in better shape, they have they will be the althous they and so they well bere will all ways.

Areas while a final factor, where the particular the particular final factor, the manual model of the particular field of the

The 4000 gives you a list more information. Analisays "and italis you have you reprogressing. It will let you know it you relazy or if you should by harder. It if even remind you if you haven't piled your gym deal for the trench."

The Hilton hotel chain Anal claims is thinking about-putting 4000's in all its health chicks in their travelers can get perfect workouts through their computer can seles, no matter where their new be The next locates environed by Anel will be three dimensional computer simulations of athletic motion. Not easily holio pranti these images will be 3 D vews projected on a two-dimensional somen. Use compute generated eigeneeting perspectives, they will give the disson of three dimensionality.

"Be using a hologram you'd really see the figure in 3 O ublong optical parents and things like that." And i says "And we will see that in the near future, no question about it You'll be able to loap right into a hologram to emulate the movements of an Olympic dompion. We are writing on that now."

Antife work may repealent sports not desination to up one of we listeners and attess haven't gaten there yet. They prefer training techniques that white new armit as the old are prenering stick figures. The meat popular among these is the cybermachene aspin-off time Skysts these has Jound wele acceptance with profesanual basiketist and factorie is series.

 The willingness to use new technologies and ideas represents the coming wave in coaching that many betwee will soon bridge the gap between scientific needs and athletic habits?

The Cyber uses a sootrague colled isolatelize, which means that de harder you post. He mee relatance you mean, like summing your hand through water. The Stylub aintransiturised the elevise to keep lember in their confined space. Now earhbound althetes have found it an adaptable and effective constituning tool.

Bob Reese Innere of the New York Just Juse the Cybenese part of the predark phystel to determine an advises a range of junt means and muscle strength By parport 100 (340) in multicle strength of themson between ingen-the Cyber can weed out mythy proteip billights and team they weak muscles sho playable form

More allowing the present and physical is therappid of the NW York Rends is used the Cybers' flexibitity and precision. We data is the transition per minute or originese per second and as athlese can serk data is written speech. We can calculate how by a creacile group. What is important is to grat bases allow the streves as the companison level of an athlese to basic heath or son level of an athlese to basic heath or low from the streves as the ords hen out. on the Cybes, comparing body strength lose session to session until he is instiched his base the Then we know he is fit. Then he can play."

According to Saunders: Cybex is doubly beneficial it offers physical advantages of awrt, controlled training and the confidence of mind that evers training is doing what it's suppoped to do

In the case of Helic Copation (of the forcing). Standards soon, we used the massies where we instantiated his apply inspecting model. We used here theore and extensions at slow speed both to build on the odd high we used here. Theorem and the odd high and to think a meet stary leave spectra and the start of the start and the start and the start of the start leave spectra and the start start and the start both and the start start and the start both and the start both start both and start both the start both and start both the start both and start both start both and and of the startes heading process.

Some aports deheads sits stack with the meet modest advance in training pair, the Naurius, a contraption that this the common types of weightfitting inversions into a strage surf. The athlete can perform althete exercises in one place without four of dropping weights and without the need for sportners foil and lower burbels.

I don't believe in anything but the Noutrus says boxing menager Dive Wall Tam aware of other ports of mathenes but the Navalus is the privilence II use

One reason way usins advices to buhard a using new learning methods fluctuation does thread as these they been lear burness to be the second second second second second advices the second second second second second advices the second second second second advices the second secon

Borne athease alwaysham about new methods has handlend the downight dibeled. I part don't believe Anni siryilari to beled. I part don't believe Anni siryilari New Yook Boots Trajeng hetajus Anyole. Keyeled Tatriki di Abguash Mold Offen downight Tatriki di Abguash Mold Offen downight simply watching howeversit with the naived keyel Anal Couttess that Kelly and other begiveren dou't with with the computer

Others point out that no matter how efleading new training machines may be they all can towercome the enormous mituence of mental states on sports tigures. In some cases in fact, the machines can be mentally developed for an other.

Consider take racer Paul Deam, who won a Pan-American Games gold medial while still a teen-ager, then captured an craneward survey of

CR CMN

# **VODKA&ROSE'S**

### Vodka smooths out in the limelight. 4 parts Vodka, 1 part Rose's:

Rose's Lime Juice\*

FICTION She really was a nice little girl, but she sure knew how to burn a guy up



### BY STEPHEN KING



He was a big broadracket and nondescript brown ing up Third Averue in New

He looked at her and saw York People with no money how pale her face was There were dark projes under her dispped into the sidewalks

clopped. They were crossing had left they might try to take streets in the upper Sisters, tem ocht twoe soci now

addy I'm tred." the it- now and these cross streets te our in the preen were both darker and less populated, but that was what he was alraid of His and was cetting tred.

and he switched Charle to the other one. He snatched snother look betend, and the green car was still those still thought a third in the back What do we do now?

fring with no money in New and a half trours son? disappeared in New York. They

noon because his radiar had been pletted-that funnygetting close again There was Andrew MoGee no konger had pacing them, about helf a lan account at the Chemical Alblock behind. There were two ited Bank of New York, not parmen in the front seat and, he sonal checking not business No money That was maybe an and that was when he knew his shoulder and the green car the biggest problem, after the they really meant to bring the was all pare, creeing along actual fact of the men in the hammer down this sine. Hart oteen car You couldn't do any- off of that really been only five

He had gone into the bank at

But most a there was a tride left Just one little tickle. It had bred death a week sitch the He looked back over his man at Confidence Associates he clich t know how long he shoulder and saw the green who had came to the require could go on like this He was car was a little closes and the Thursday night counseling and too and Charle was no menous sweld began to run session and then begun to tak down his begk and his arms a with an early calments about It was five-thirty in the after- little faster. If they knew how how Emest Hamingway had noon, and Third Avenue was little of the push he actually committed suicide And on the

PAINTING BY GOTTERIED HELNWEIN

way out, his arm casually around the presuccrisi mane shoulders Andy bad own hern a push. Now bitterly he hoped it had

One this polie, he proved That's all

They were coming up on Seventieth building up at the corner in a temporary

anyton Made they're deputed to not with a fassily equation? Erase if from the

Please mater you're stopping on my 

Tao! Tao! he yelled flagging modly

Andy opened the calors beck door and

checkared cap The seed to the cabbre

"Right the driver said pulling servicely

OWNE

wouldn't want to go to the city or state cape bling for a while at least They reall a bunch of a rives the blacks

Checke was going to sleep. Andy took off

wanted nothing to do with them. One of the

I don't know. Andy ased trying to think

I'm going to give you a five-hundred-dollar bill to take me and my daughter to Albany Okav?" Andy stuck the bill into the cabbie's hand, and as the cabble lookad at it. Andy pushed . . . hard 9

Where? The driver stared at him in the rear year mirror. Man Lican Lizion a tate to

Anny pulled out his wallet which con-

Joesson meter-

Andy stuck the bill into the cabbles Andy pushed and pushed hard For a ing left and he had scraped the bottom of

Then the lealing came - as always ac

take on weight and his bowels locked in was control to throw up or die. For that ways old when he overused a

Gee mister I dan t know-

The deal coes only if you don't mention weeks she's been with me. She has to be

Westehon onthe the cabble and "I

gave one last little shows In a very quest

Listen the chivar said it a droamy

Thad Paul Mont

State College in Oteo Harrison was a

We no opena to owe each of you twelve

y originalisa and gardenin an intector. In each scheduler, a capaciter is not intector. In each scheduler, a capaciter is not built gains gain seals at the thre capaciter is not gains gains gain seals. The scheduler is the lower factor of the table scheduler capaciter than the capaciter is the scheduler capaciter. The provide scheduler is the scheduler capaciter is a higher to and mich fallscheduler is seenable and scheduler and mich fallscheduler is the provide scheduler is the scheduler capaciter is a higher to any scheduler scheduler is the capaciter and mich fallscheduler is scheduler whole is pay scheduler year on weak large at whole scheduler. The doced not group when the burden whole is being scheduler is weak in the scheduler at whole scheduler.

Andy had been put onto the experiment by Quincey Temport, the fellow he held roomed with in callage. Quincey knew that Andy's financei situation was precarious.

"How would you feel about a quick two hundred?" Ournory asked

Andy brushed long, dark har away from his grean was and primed. "Which men's corr do Leet up my concession in?"

No its a psych experiment. Guncey and "Being run by the Mad Doclor though Be warned

Who he?

"Him Waskaa, Torto Heep big medicine men in um psych department."

Why do they call him the Mad Doctor? Wall: Councey answered hera a nit men and a Sanner man both. A behaviorist The behaviorists are not exactly being overwhelmed with love these days

Wao, he wears very thick little

glasses which make him look quite a bit like the guy who shrank the people in Dr Cyclips. You ever sea that movie?

Andy who was a late-show addrot had indeed seen it and he foll on saler ground, but he want is and he warread to participate in any oppentenze run by a professor who was classified as (a) a rail man and (b) a Mad Dector

They re not inying to shinrik people are they?" he issleed

Gaincey laughed hearthy. No that a shothy for the special-effects prople who work on the B home protunes. The said. The psych department has been testing a series of low-grade hall configence Service working with the U.B. postigence Service.

CIA7 Andy asked

Not CIA DIA or NSA Quincey said Lower profile than any of from Have you ever heard of an outfit called the Shgp?

Respective and solve apportant. Contrast the paper. These allowed in the based he said. Psychiatage cheensity physics, belong on even the societage physics, belong on the societage physics, belong on the physics. The physics and the solves of the physics belong on the physics. Belong on the physics of the physics where which are paids half according to the where which are paids half according to the where which are physics to good in the physics. Belong the reports body good in the physics.



Send your britishy cand or role and on, or July to Mis May Dobe. Man Druit: Landhaug Tennessee. He think you

MRS. MARY BOBO is the most special person in Lynchburg, Tennessee. This July, she's more special than ever.

Mrs. Bobo has run the boarding house in town since 1908. And though she's never served a drop of whiskey in it, she's been a friend of our distillerv every one of those

verses. This year, Miss Mary will be 99 years old. Everyone at the distillery will be sending her a card. If you're a friend of Jack Daniel's, we hope you might like to send her one too.



Tennessee Whiskey - 30 Przof - Disfiled and Bottled by Jack Teniel Distillery Lem Matter, Frag. Inc., Roule L, Laschburg (Pop. 381), Tennessee 27352 Paced at the Antonnal Revealance of Heatance Flaces do are United States Government -

### To sell the American Dream. Madison Avenue charts new frontiers in consumer science

exercise rearly 2,000 a day better uproar the content of advertising is increasyou dan't bei rye it, when you get many commercials do you hear on the radio? The American Dreem to work? How many messages grab you as you one basic question. What does the consumer pass the newsstand? And you haven't even

Two thousand messages a day! Word mesor who we'd like to be Delivered by messengent Lice DiMenceo O J Sempson Fattah been datamined - and there are statistics to prove if - we predit with beets on the state

We all know that ads don't rust spring full- or produce "a purchasing response" but bizen from the brows of apency "creatives," many are trying. Dr Sidney Weinstein, e But most of us remain unaware that, as the ineurophysiologist, is one of the most re-

Specialists in a broad range of scientific diaciplines are protong our attrudes, our bodies,

Marketing makarch has always centered on want? That focus is now deepening. The conuses have been designed to poneirate the centors in our breins and to teo social values Advertising campaign strategies in the Exothers will reflect the discoveries of laborato are learning more about the consumer than

note of competing messages swells to an apopted scientists known to be working with

### **PSYCHOGRAPHICS** BY BIBI WEIN

advertisers today. Dr. Wanstein clams his is the only commercial leboratory that performs lepth-blocked brain wave analyses, others moonlight out of university and goverrment levelates.

By determining the propertice of bolds when is a bold works that is protect regawhen their neptors. This can in masked the dopene to which her indexistal has been abore the second second second second second

Which elements are vesting? Who is the bast spokerman for the product? Who is the several suggested themes to ben? Should Ladvettee on radio or 'Y or in prim and in whan under? Do I need 60 seconds, or will 30 db, at about two hinds the cost? Wainalian his found that in some instances the seconds – chaoper skill – is most effective.

Among Weindomis clearts are all these television networks a dozen obverhang agencies and manufactures of patkaged legot, beweitiges coematics catts and appliances. Most clearts terrein publicly normoless because they needs Weiniami to econicy attraugh ha cant understand why

When asked to appear on the popular IV those 30x0. We rease sought permasen to an operationals for which he had poor vided ropparch. He was perpised when a major apercy ideated 3 k. In this teacher bundled search thought goes for one hunded search thought goes for one and they bund they are one for an file them.

Brain wave studies, whose potential in advertiging has basely existing of elevant memory and the studies of the studies are denied from explang methods that, when combaned with modern science, produce minutely defaulted invisions.

Psychographic sholes, also krown as citizatian mean-ori the study of biestyle and values, cuery our activities, mientes, end operations in registry precoded quetionsurvers that are administered to housenot or logols and are free subpected to statistical assiyees. Infeature in a approach the assirption half recoask, enough immoculus questions in become clear, whys, balas clearing and proof the clear whys, balas clearing and

The most ambitious psychopysonic study canadious to lars probably fields barrettiffeetiys study complexion in the lar barrettiffeetiys study complexion in the lar pages for women 70 for mon —were hand-delweed. These was a 35 percent ratum Americanian old ana. upits barretter Charles Stanrasti whose politiess to make preven of all I don't know what people were consuming leafons these studies begain in the talle Sottles, but now they are consuming lesure, Stanmard reports

"Black-caller horms are chock-ful of the label gadgets to wary larray in upper class horms we reason in practinuous at the work-horded claim parter any batter horder as buying watters about or the quality racion would be increase that we have house a work of what we have house no class with the work we have house no class without what we have house no class without Mo-

The Burnett data also constonate softintra offer observer have index two and now nose intervised in consuming experencestituarino consuming funger. This force meshad as it may be is now being used in some form by about 50 percent of marking uns for any about 50 percent of marking in the ast merchandles are expension to its complex peoplesion, more than ever the

The same principles that Moskowitz used to come up with the ideal polato chip are now being refined by commercial solence to optimize the image of political candidates.<sup>5</sup>

fore, advertisers need to know what we their, what we includly went to do will our time, and how in dataf, the fragments of our outure offer from one another.

To the end thestyle remarks "tisch is an into pries as Supption Barks, media vice presentent of Los Barrets pets it. But grants types we devide us were offerenby depending on who is closely of an end ware purpose Broad Subvergen-The happy housevelle, the organization men, the of easier seeking main and is ont-mey be sufficient for we can be broten down into very shall be profibilities.

Product-specific psychographics are designed to measure the oppeal of a dog feed that exists mean hain any cument brand or the potential for a metropolism dely in the subcross Score meanschurses may seen it a market opportunity for shit another seep to be targeted at people who are descalated with available beards.

Establishing a market for a new product is not an easy job. To arouse the consumerial antesist everything from a producta color toxure and smell to re-price and packaging must be considered Psychophysics: Howard Moskowiz uses computer modeling to cleate a cuck marketable formula from these scangebies

An associate of Weston Group, inc. Moskowić obsorbies himself at a verticity engineer Basically, ha crobals the bosh possible consumer products by systemati cally varying several ingenderfat, politing mashers from consumer ball panels and developing equations that modely the impendentitio such the professional models.

What we come up with an anotate perfect actors which we wight against the stress calculate how most against the stress calculate how most makes the product charges that the manufacture of by making at more expendition to the schema control the stress of the schema control the schema the s

Product quashes," says Jack Levis president of Wester Group and formerly an executive all Proctor & Genote Tester Internet by the customer as she or ha perceival them, not by mo stilling here in my other. The traditional test-marketing proteered takes years. With computers we can do son month.

Bensory engineering currently has gwate impact in advertising than bianware backets because it is more supple and detailed. Up until new beam wree sublets have indicated city' activitizion and "moreosi", but more details from the cardiorocores is just over the fortuon.

Warrstein feels their use will grow because they Auhil a fundamental need of advertisers

The people have nothing to hide you dan inpl your retreareer data. You durit need brain waves he says. But if there is any question of morality. Peo chances anyyours not geing to get the hulf. People have all script of athl/dots that they control communicate verbally but these rainethelies downaics that hey control

To appear proved in tryping to the even instances a brain wave that occurs within 300 millivacants of a spin-tocalase the Control Robod Deletrati. The Calacity the Control Robod Deletration the diffusion and the second spin and any be inforcident the electral impulsion of the terms not in the series that impairs and the second spin and spin and the spin and the second spin and spin and the spin and the second spin and spin and the spin and the second spin and spin and the spin and the second spin and spin and the spin and the second spin and spin and the second spin and spin and the second spin and spin and the spin and the second spin and spin and the spin and the second spin and spin and the spin and the second spin and spin and the spin and the spin and spin a

The solution likes to cite a rejected study as evidence. Rat his work is more accurate than traditional research. A year or so ago contraction refer to

50 OWV

### **CHILDREN OF POSEIDON**

here is an alien eivilization ' red-brick post office ere of a living peacefully on the clever december houses and modern buildings at perhaps even more than that it charming place by the sea. Woods Hole is a lochiological

Sing the road to the vitage, the sait all, the house on School old some library, the bank on the Street is on obvious top-off. Al-caster with its hanned windows and withewinted some cover.

Concealed behind the fiscade. solits But you won't hidden from the outsider, in a see it if you go there. It is set stacknological colony devoted to emid queint New England the manne environment But called Woods Hole commany of the fature Like nome Holywood set, the weathered, wideten cottinges bittering fors the sun and the

ing the wolknow and the stand. are drived of canyon tange-

PHOTOGRAPHS BY MALCOLM KIRK



studies and racking chains instead, there one scientist seed "this whe dece to be"

of numbers to his associate sitting beside with Great Harbor Go past the hipples in the sourt Sigma 7. The statistice gathered their tan years and granty directors sealed to compare the makeup of fash populations by the doorway and you becan to underfish available for food in the years ahead Acother nanoram closests cials taken page the past 30 years to plot the relationship valitish. There is a rumble of level her in one between charges in the temperature of the corner. A group of man and woman with sease surface and short-term climitie fluo- some sort of exotic manne animal printed babone. When this ty emerges is a clearer in ink on the backs of their shuts are chatunderstanding of the overall climatological lung about the last fish tow in the Pacific ochus. Nextby a itsel procesm formulates data about the different layers of the earth's storrach?" somebody at the counter interpr-information that could prove in- shouts A man with fully white har puts valuable to the field and science of earth-

a straton ma of ultramodern science and perikaryon were lowly.' He accidentally lambar draw, home sumaindance. Not that citizes his dapkin to the floor instead of kind of Loation might be the vogue of the importance smudges, there are light perfuture and this waterfielde village could be of scribblings of a complex explecule

Februarth the willane serves as a summer resort for the affluent and as a port for the people who had no money to sat there tree ferryboats that travel to the islands of Martha's Wneward and Nanbuckel immediately to the south

swoon-mouse with science of the Olympian a new Fishmonder's Cale across the sheet ets. The opportunity to study at this center is as sought after by most scientists and graduate students as is tenure at the Indatute for Advanced Study in Perceton, or manubarahip in Washington, DC's Cownes, pleaten cursures (apper lin) J fain sampline Club, "It you ve got to study the opean," weekd in set name for polycon analysis (hohi)

Walk no Fahmonger's Cafe, the local A brancied college type is reaching a list mo the channel that connects fiel Pond stand that Woods Hole, more than a re-

startand two shorts is casually taking to his friends about the effects of chionne on lar-"fou counted how many isopods in that down his avocado-and-Muenater randwich, leans over to a woman string Like the Computer Center, Woods Hole is nearby and says. "Your sections of the

Woods Hole's deceptiveness lies in its the Woods Hole community was evident a bund that the restaurant was permitting wards She closed the place down Imme-To the rest of the world, Woods Hole is to pay off the restaurantis debt and bought Just accessive Fishmonoer's sourceed stands the Marine Biological Laboratory (MBL) This cluster of concrete and old

Doewn protogist Joe/ Goldmen inspecia phyto-



red-benck buildings attracts top-notion boblights the wey Saturtsfriand attracts before. At lists count, arms 30 Notael becardan and a low Kanool Modula I Sindrice versions that passed through to buprivate at the Without Modula I Sinonnand a cere for Uberculates wolfield at MBL. So did I van Parkot the Parsan Physiologist who candidance dogs to droop, so did James Wathout her Parsan resourcher workshow her DMA-code And won Samt Oprops stanting and the backen attacks and divergence

Earn Duggs, who win the YU Most Protect to the accouncy of version C while the experiment of heat musics contraction, is all using operations for the contractions of all using operations for the contraction of cancer. The centres is a contraction of the result of the centres is a second of the result of the centres is a second of the result of th

Theorema are a specially at the Captin Kidd a tavern nearby which review the astric correspondence at Patheorogie 5 bat for a younger generation of specifies the decimal shark pairs close to the legislar—is typically soundly the convert satisfies are red.

During the summar the ball is usually appreciated with coolingly exceedences from thirteguith react baschas who lablen to the barreguide which dowing all not been But disployed among the sea of impairs barlows pelevenes and other banch pensons are pociets of tosecretions. Inthement and students duculated period throngs tostbooks heisen't getter around to comption.

For fire up the steel with the Wands Holds Coardinguides I microsoft (which is the lake to coal & whork-eg, after as invalue opportunity), built of the installance walk wands opportunity to be the installance walk wands opportunity of the state of the installance opportunity of the installance walks wands opportunity of the installance walks walks walks walks opportunity of the installance walks walks walks walks walks opportunity of the installance walks walks walks walks walks opportunity of the installance walks wal

Jost Goldman at WHCI is department of biological operingstably is investigating how the chiching starts of the coster called phytoglainhton subsid in these environtiont by regulating certain things like semperature. Goldman is able to "form mass cultures of algae. Potentiel uses Goldman thinks, could be anything from profilin packed seaburgers to the dovelopment of an important energy source hisrvesting and liamenting algae to make methane.

Like the MBL. Woods Hole Oceanographic is not without its alumn. Make soentials serve these on one advicery board after another Robert A. Prouch 1br example left a position at WHOI to become the director of NASA.

Secretion in Woods Hole actually began with Spence Tabulation Bad, an assistant with Spence Tabulation Bad, and a with spence Tabulation and a second sharp peoplation changes among food finder improved with the Weilson. In assistantial the ocurry is that government instrume laborations in 1855. For Band, thu area was ideal had only were the result belawern wark current of the Gat Sharan and oddi waters of the Laborator Current, Li I was here them the command in it

If a creature with three legs landed in the village of Woods Hole and wanted lab space, as long as its science was reproducible, nabody would care

river affluent. The combined affect creates always diversity of mattee tares that forwer ample apaciments for study.

What was droug people dominantly of automousles a people break of poople as declarations. The seal penetial the plan bit kept the southet together Such plan bit kept the southet together Such plan bit kept the southet together Such plan bits kept the southet together Such plants and the the subcontent was planted to the subcontent was planted to the subcontent was planted together and the subcontent was planted to the subcontent was planted to the subcontent ensembles the subcontent was planted to the subcontent was planted to the subcontent ensembles the subcontent was planted to the subcontent was planted to the subcontent ensembles the subcontent was planted to the subcontent was planted to the subcontent ensembles the

The large Victorian structure where Band once worked has long since been tain does in its place, publied against the valtor's edge at the corner of Water and Albatroes shees, is a blockly lakonatory called the Northeast Fahrene Dono of the National Manag Enteress Service Local residents. Inough simply call it the Fahrene Kerveformagon about from the authenten Albreis is gehiered at the lacety everythmic term he elected of poliution on hein terves to the size and vie his sense of term in a particular area. Join Glosion is the information officient at the faility and is rather groupd of the Follower barries and the start is the term and the start is the term is real-abtic establishing of the vicit the Following was the leader in between privational distance with the Soviet Uhen To study agreement with the Soviet Uhen To study ing the work's occurrent.

That lend of record has put the Fahrenes in one of the bart positions to write faile of the costans and of the fahren industry Because of the internession costs of energy Obsens sees is revolution occurring in marine contreven and management within the next 20 or 30 years. "I will cost inverfortion marine is contrel to the country and fab. he says. Foreign fahring in our waters will aimstor ontentive dealer

This is good news for the U.S. hitmiginstanty Gui Globo environs an overlangther bulkes when apphyticated company having and simplifing optimes will bandium the openan into visit (quado supprimitivity service) to be Market is the metal afforded and dimensionerable of all of framinger field back is the northwest Market will be constructed on obtained. In openments and counter obtained in the entimeters and an out ischnical knownhole increases.

Hidden in the the chieke section of is offmarker with an explore of the radia of a dimarker with the section of the chief of the durant information limit has been used by these does not be easient occord of the these does not block an entart boxet. Interest does not block and the durant boxet interest does not be determined by determine the and the durant boxet of the durant boxet.

When her imparates powerful institutions said with committee to an upperful in said with committee to an upperful in additional peries based to be a tritte potting and showing to denote the institution of the said of the institution of i

What do the scientists of Woods Hole do with their time when filey/re not busy, dosecting the world's oceans? Many spend their off hours saling of fahing with tires scientificatly salected for their effectas
ness Others and cools or musicians Boldman Ness to spend Ns time in the gam den near Ness to spend Ns time in the gam ing tochniques any applied to tomations and beans. "Whatever Knowledge I have based on my plo, he says, "is transformed to my outdoors activities."

This find of attitude estimates this town heights wars maint are bowng off the obtain its sean in the plays. In the Social's deviated beliet discords in the discords deviated by the attracts guid. But perhaps its basis among people who here at Woods Hall. As in the so of entry attracts and woods were at the social control attracts of the social of the social control attracts of the social were the lands of the weight and were last people woods were the social one is non-discord of the social of the social control of the social were the last people woods would be the social control of the social of the social control of the social of the social of the social control of the social of the social of the social control of the social of the socia

Notifies allows the mono one-systemative servity Woods Network have a service and the vision such a contrast might generative as marked excernment as the Severy discretifies and course, is to choose the teen-lassing dog the update tog, or emphres (and) the most of house the teen-lassing dog the update tog, or emphres (and) the most of house the teen-lassing dog the update tog, or emphres (and) the most of house other and house dogs in fact outh house bases much black dogs in fact on the house base much were and black dogs on factors in teen and works the worth locks. It Woods Holes may also their that they have staked out a uppeal for the follow. The stake of deling themselves the scentage at Woods their comparison only a small memory of Fahroan's heuristical 22 000 resdants Wait for the drawlondge, to parallely the memory of them the visibility. To the scenario gray belay and see the ratio Woods Hole is shring amor

Detry underside of the bridge, sprayed to only an enderside of the bridge, sprayed is only part, are the words det out or cost Hous thought to only only the only of parenties. The part is laded as if it had been there for a long time. It is the most bisist cap that something is whole Built the signals are obvious the causes form essentimes own are ad-

A fee years ago Empure Hrotho of Jaces planned aurohoar vert be evilege to docum he leid a merne biology, though. Fainouch got wind of the visit and arrangefut herearns to bus allevall the more instancial apols in the sina and of thim barg the horizon of Kinhane Lee Bargets, where of the same, here of Bargets, where of the same, here of Bargets, where is the same, here of bargets, the same to be and the same of draw deckets to Wacde Hall. This day has bargets docum to the lot king Hallerson and draw deckets to Wacde Haller. This day has barget docum to the lot king Hallerson and draw deckets to Wacde Haller.

Part of the problem lies with Woods Hole's international clout—a fact the town lathers are quick to realize But also being the mapr employer on the Cape. Woods Hole has economic clout. Tratinical is hole has economic clout. Tratinical is



pulse dependent on the scientific instrutions' says plage owner Bill Banks. Not tally dependent but incogn to had, they maved easy there of be hell to pay' Nevertheless with oil of its political influence the village takes little advances of it. "There have been times, though. Banks acts "when they wated they could have

There is a table poolarity, Boly sarrows income prop, and the same it been in Fasmouths and its base it been in Fasmouths and its base it been in Fasmouths and its first the beauty in the classes for dustion based in the case of the same its fast and then by pools and the based tables, the structure of each same its based to be structure of each same its based on the same and the two same its based on the same pools and the same its based on the same tables in the same is based on the same tables in the same is based on the same tables in the same is based on the same is a same in the same is based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a based based on the same is a same is a same is a based based on the same is a same is a same is a based based on the same is a same is a same is a based based on the same is a same is a same is a based based on the same is a same i

The course as collegenet fill me attend dawn fectors. Onthinking is an influidig and no brief working. This is ony and belographic landson, White It ony and belographic landson. White the presure of games ar tests. The order on they pick ap on field hips, with repraction the scattering have an order does be they be laud all be have an order does be they be backed they are not order fortering backed how are not order fortering backed how are not order forting backed into premission. The star not all a scene of these of home or the memory backs of the star of them order and a scene of these of home orders.

The tensors and indice percesses the they error the exclusion is when they error the many model data. Use out when the second is the tensor second and the second is the tensor second and the second is the tensor where tests to tensor is a second a tensor where tests to tensor is the test of the test of the test of the test of test of test of the test of test

The exposure in science cerver may any be thermulated for sciencific cadry, but Landth and inside the rest of the popuation of the science of the science



#### RCTION

Freud had to solve the problem – or he d shini rato the dream cube



#### EY BARRY N MALZBERG

Hereit is her sterett of the sterett o

The Hydens eithers peeping it encount Friend Loka prondy little glances at the huge schema pinting around him looking-at

#### PAINTING BY JOHN BEFREY

In a disader of a conselection, a structury or sign Here in the last worthy fills outputy party V is on a surgenous means in the hereis-surgenous Wages. The varies of the orders of the surgenous means in the relevance fort a distancia of do samy type were possible. Furthermoe, the volution were possible. Furthermoe, the volution were possible. Furthermoe, the volution was distanced that as is lecthology adtional data was been as the surgenous prosent the surgenous prosent the surgenous prosent the surgenous proting surgenous prosent the sur

Freudahrugs. He reaches mards his vest pocket for a cipar and match, lights the capar with a lipsrish watches proces which ridor and then returns to the small outacle pere, the wall with objiornala Fraud faols elators have done everythere possible to grant him credibility and a series of dowill only blame him more. Well, he thinks well what they decade will be done. I will be receive another easignment. But Man again I will have no knowledge, and therebort, not more. The last time / had an aspayment was in the early twenty second thought he was a wrie and direatened to tionss. But here I am again and none the worse for it. They passarons exclude me

This thought impain this towerk the next act, which is to be communicated on his deak to contact the calcium and sumon min to find the Call of the introductce a simpler individual calculation of the supported of the sur-Towerk endors sulwhether they towe given him this to make the sub- and calculation of the calculation is a sub- and calculation of the calculation in the sub- and calculation of the calculation the sub- and calculation of the calculation of the sub- and calculation of the calculation of the sub- and calculation of the calculation of the origination of the calculation of the calculation of the origination of the calculation of the calculation of the origination of the calculation of the calculation of the origination of the calculation of the calculation of the origination of the calculation of the calculation of the calculation of the origination of the calculation of the calculation of the calculation of the origination of the calculation of the

Doubtess that missible pair have already been summoned and failed on this case. There is given satisfaction in moving this But ha would have hopped to have been reconstructed more oftan. Two jobs in this havehy-find, thream the terminy-accord bolose that disaster on Venus, and now this hot pool fait pool all.

Well, there is noting to be done about that Hose he is, and have the exposability for the mesons reposed. The captor notions his cable, a significant state-hose dimendeesers in this queue bus versing a full dess cap, the expects impation but retrained. Use all on based to have been once the structure orders to compay with Final d percedures. The advirreshows on enrol control the task of the restrict, has they can abort, terwing this shap path at the task tooch of a light-year-bitable time of the strength too opposer knows the the de star strength from Final data and the time of the strength too basing of time strength, the system The takes over those Weights. The dataset takes over those Weights. The dataset

"Of ocurse "I have disays symplet fields" "They as a green humanical race primitive bid with the potential for incrimality and advance. They as hostific and barbaito Wain going to who them out while we still have time. I have plans, "the captain says shady." These incrimous plans."

"Of ocurae you do," Froud says He pufts on the organ with what he hopes inservibles a gesture of estimative Why do you feel you must destroy the Vecans?"

"Because otherwas in a generation they it have spaceships and atomic de-

The last time I had an assignment was in the early twenty-second cantury the madman or Venus who thought he was a vine and threatened to cut off the dome respirators. I didn't handle that too well.

vices and will destroy on. "the captain anya "Don tworry I'm completely in control. I'm a highly trained man."

Frequirise has been the pageals reports priperior by the administrations. Of ocurse tisses are no Vegens at all, there are fines silicon based plantes cruling an and star in free centures of space probes. He has never bases found on these planets. Thereas you're trained, "Freud says "SML I have a massere of the work area".

Please ask it, the ceptern says hoersely 1 cm prepared to deal with any pleasance.

That's an important quality to be sure. Now what if it happened to be." Freud says sents, that there are no Wearn?

"There are Vegans-Several hundred million of them. This going to work them out

"Yes, yes, but what if there eren t? Just to energiate----

"Poure just like the rest of hern," the capture says, his table motifying. "Nou damned toy you reconstruct "holine just like the rest Don't harmonime. The gaining to sake the unknowne. Now have to get book to my bridge. I make prepare for the density cancer-sake not work on orbites, which could encircle us at any moment "

"How long have you fail this way? Frout assays middy as the caption stake out Froud sights and stude his caption of the cleak and then starse at his diploma for a while Then he summons the navigator

The energy strength control building as an interval of the energy of th

These larges the even on the way and lights another cigar. The arrangement ways and the second second second second second to the second second second second second to the second second second second second of the means that and the second second to the second second second second the second second the second second second the second second second the second the second second the second the

Final datadi, nestere in dala reginngi and neurois hino constra relation to ing. The setter of constrained neuronal and the setter of constrained neuronal and and an external setter and the ingle affair works to both the case reside them. Space for an early-leventethy returns viewness to both the case of an effair setter and the setter the encounter work and anyoes the thinks. The administration have obtained the second under the mission (at its with the second setter). Set in earlier case advanced interactional Set in the case devices the maximum of the mission (at its with the second setter). Set in earlier case advanced interaction of the setter case advanced interaction.

#### ESSAY

A celebrated author relives the inspiration that gave birth to his epic tale of power and paradox

use began with a concept whose mostly unfeethed images took shape across about six years of measurh and one and a half years of writing. The slory was all in my head unfil it appeared on paper as I typed it out.

Loncerved of a linety novel the whole introgy are not been should be messagine convolvent. But periodically wettake is. Demogogices, families con-game within the introcent and the not-inmocritotystandors – silvevorbitievo and in the doma. This grows from my host periodical years who that a soul or hostephing. Bean if we find a soul or hostephing. Bean if we find a soul or hostephing. Bean if we find a base of the source that shares comting sectionally addressing where we have periodical addressing where we have periodical addressing on the host periodical addressing where is being and addressing where is being add

Partismal observation has commons ine that in the power areas of politics economics and in their logical contex painties, was, people bind to give one weary discription making capacity to an isader wino cars weap himself in the same wino cars weap himself in the paint bath of the society Haller old is Churchel did it. Franklin Rossevelt did it

My favorite examples are John F Kennedy and George Pation Bolh Isted Berneelees into the Namboyan Calmido pation - conscisuosty assuming biogen han-Ma appearance. But the most calcust observation reveals that neither was bigger than Iste Each had our common human asimpert - glay feet

This than was one of my thereas to Dune Dont give over all of your chocal faculties to people in power no malter how sammable those people may ap-





pear to be. Beneath the hero's facade you will find a human being who makes human metakes. Exertous problems arree when human metakes are made on the grand so be evaluable to a supprhero.

And sometimes you run into another problem

It is clemenshable that power structures tend to attract poople who want power for the sake of power and that a significant properties of such people are initial anced—in a word, instere.

That was the beginning. Hences are pendul superherces are a catastrophil The matakos of superherces involve loo many of us in cleareter.

It is the system themselves that I see as dargeness. Systement is a deathy word Systems crystella with human creators with people who employ them. Systems take over and grind or and for the hysical like a flood take that packs up everything in its path. How to they organize?

Aid of this encographiation the staff of https: denme of event-interfere- and the in the winar target business test. It is all right to hold the staff of the staff of the staff of the logs regression and below in the staff of the interval are analogo in Sueve of Logary is eventime - porception and below in the organized online. House the staff of the organized online. House the staff of the object to a staff of the staff of the object to a staff of the staff of the based to a rightee. The occors when of chrome is never and analog of of to startely CHOM is OPCO.

But that was only the becarries

When this concept was lable finish in the mediate autoin theory and all finish in the mediate autoin theory and all Department of Agriculture present them The UBDA was seeing ways to control of control and process about ecological installant, but my agreemen conceptible rime with account the opposite and the analysis of the agreement of others may all the control theory agreement was the three the the advector high in the launching of a new cuandow.

Our society after all operates on guilt, which often serves only to obscure misited workings and to prevent obvious solutions. An advancemin high can be just as addictive as any other lond of high

Ecology encompenses a real company, however, and the florence project field my interest in how we inflet curselves upon our player I locald begin to see the shape of a global problem no part of a separabolitom any, other—social acobogy political ecology economic ecology.

His wa open entried but

Even after all of the reservch and writing, rheditical musines in religions, psychologialytic herenes linguistics, adonomos phiceopology gent research and christratic mys faid of study in sets of the distributions. A new faid of study in sets of the line psychelings of planetary societies.

Out of all this come a prefound reinvibution of my ongenial concepts in the beginring J was just as ready as snyche to lait into step, to seek out the guilty and to purst the summers ower to boccete a laader Nothing. Tait would gree more guitblection than nithing the smead of yellow pursterm the crusade, doing the book that would not the old wrongs.

Receasizable to several memory cavalities, in two between this evolution, or every and s short of deals, here the every thread on a standard generated thesi and the short of deals, there is occurs that and the several in the second deals of the abstract legislature or make a mostas of these as the second of the evolution of these as the second of the evolution of these as the second deals, but we deals the optimum that humans administer the ideals and that humans is one there evolution.

Reevolution taught the caution 1 appreached the problem with trepidation Certainly by the lociest of our standards

Vou want absolute prediction? Then you want only toctay, and you reject tomorrow. You are the ultimate conservative You are trying to hold back movement in an infinitely changing universe.

there were planty of visible targets, a plettore of blind fasaricism and guilty opportunism at which to all partial barbs.

But how did we get this way? White makes a Noor? White part do the mook play in creating the poweru?? It a leader cannot admit mistakes, these metaleks will be hidden. Who also be lead thin?

Error the toppe in make, the toppe is usually based on a error theme that is played many offerent ways Schaumas there are there votes if half do functual damage assume the marphay. There can be accordary theres and controls in the more when a single vote introduce the primary there. Topware, the whole is unservice to the late later.

What were my instruments in this coological lugue? Images, controls, things that thim upon beneakiwa and become something quite different, myth agures and strange creasives from the depths of our common heritiga, produces of our technological evolution, our human deems, and our human lears.

You can imagine my surprise to learn

that John Schoenherr one of the world's foremost which's shots and illustrators, had been lange in my test with the same inages. People and it difficult to believe that John and had no consultations which follow the seasy Lansace you bhat the partiings were a wonderful supporte to me.

The Sandauker represer like the weath rend scores of Dake. The Baron's patient could abacit a world. The controptients are insects proving on the land. The sandworms are lastift subprocess grown monstroas. Striggr glates out at us with the menage of a wartock

What expectally pleases moils to see the interneoven thernes, the suggestive relationstups of images that exactly replay the way Davie topis shape.

As is an Escher Integraph. In wahren imger wich neurum thanks that burn to parvaise. The central pendids contents that transmission the What Jacob Hauf Sand Fach the Darphic Chaot is a set of pendidtation of the Darphic Chaot is perform a pendid transmission in guides surformer and in stack does non-without a burd of the Chaot is concentrative to the previous model of the Chaot surformer without and the Chaot and the Chaot and the Chaot Charter does starting. M Charter are the Cha

Each imeng descriptive step you take drives your vision outwild into a tagor unwrise which is contained in ethil a larger unverse ad infertam, and in the smaller unverse administram. Normatic how linely you subdivide irms and spirale each any divideo combine a stratig

But this could imply that you can cut across lineer time open it like is ripe fruitand are obrasequerital connections. You could be prescient, predict socurinely

Predostination and panados once more

The fave marks is in our methods of description in languages, miscall individus of meaning in moral shucbared and in philosophies and religions—all of which opening miglicit (mits where no limits anall Paul Muset Des where no limits and Paul Muset Des where it is says this time after time throughout Davie

Do you want absolute predictor?

Then you want only toolay and you report tomanow You are the uternate conservative You are trying to hold back movement in an infinitely changing universe.

The work to be close make schots of us all

Cf course there are other themas and togs inher plays in Dave and incourtout he investion of themas Meesah performs a classic investion of themas Oblaws of Dave or pands the author of themas intervess on the comparementary that the perform of the objact Nos and your own southers boothood the space.

Cauton is indeed indicated, but not the terror that prevents all movement. Hang loose. And when contracts asks whether you're starting answ cut, do what i do. Pan like hait DC

74 CMM







Here the moon is your friend, the sun your enemy

BY FRANK HERBERT

Arraise – Dure – Cosert Ploter A wasseland where nothing lives except the space and servitorms. Arraise has spaced probent. Storm build up aboves or is server thransen Marretree of fasthnos. blow up to server hundred whereas a hole the presence of third all accound you. There means a hole would the wind and hiddan from www. The space window if comot bo made or times to emined in Arraise.

PAINTINGS BY JOHN SCHOENHERR



6A basso voice rumbled. "The biggest mantrap in history Is It not a great thing that I, the Baron, do??





The Semisure petitiv freedos: tuppit arcos torocos from the Semistry Semistry Semistry Semistry and insociating to general semistry. To The Semistry and insociating to general semistry to The Semistry and insociation to general semistry. The Semistry and the Inserved Long Semistry and Semistry and Semistry In the Ioo function Long Annual Semistry and Semistry of the Ioo function Long Annual Semistry and Semistry



Access band a gast word - a naw - wuld have the Orone bether humps and energy Wind care by none boothesis in the band or to be the second second second second and the band or to be the second second second second band second second second band second se

All you must do is call the maker and ride him. Go, so you may travel the sand as a leader of men.9



Cut of the haze came sandworms, a massed wall of them, each with troops of Fremen riding to the attack.





A scheeping: cace boosther from the direct - schedt private and care to assessing all accurst fixed-types relocated in a gast questing mouth is come eightly releter to clamater organization and the comes shaped by optimises glaring accurst boost. Acces: A lat man in a molified burroses telepoid informat bases a 15 months before an throw and in the schedule access accessing before an accessing accurst accessing of the frace. If you have been accessing the overhap of the frace. If you is bugst be fore information accessing of the frace. If you is bugst be fractionation. The accessing of the frace. If you is bugst be fractionation. The accessing of the frace.





A physicist who helped to master shock waves argues that society needs better ways to deal with future shock ... while it still can

# INTERVIEW



Alter studying three course source works in a source Alter studying three calculations investigation of the source of a source of the source of the source of the source NASA All Work Well I dow to a close, the moved to Contai to Seach the dynamic source of the source of the source source of the dwallaged new styp to contain and Study shock waves anniar to the oreal that balair an andbalan books do her source thanks.

From 1965 until recently he cleacted the Arco Elevent Research Latonizary in Messachuretti, which produced intentity whiches for builten massies and the space program. Other projects included interest and an approximate generators and intention which clinicated electrical prover directly and following to a small of bit gain Wesley with his testime Advant, a surgeon, he exceled fluid mechanisms to device anthous heart waves

In the ind-1960a (settowitz proposed a new instaluon, the Science Court, which is ingeled works inside government officate to base their decisions on the boot possible isofinicial adarments, anneas at through a public-extremp proceeding. "Oscie managers" would ague opposing www.on such issues are restortatified and openetic encorrecting before impairing under

Today as a professor at Dartmouth and MIT, Kantrowitz contruces to insist that society needs new ways to come to gross with sciences and technology Crimic controluting editor Monte Davis asked him how one new kets the Science Court is tange



 Scientists must confess their ignorance to peers because it they don't, they get stepped an But outside the community many of them no longer feel bound by this rule of trankness. Omain In the years since you first proposed the Science Court, we will save the molecular busingets'. Adversaria meeting on neorthariant DNA, the establishment of the Office of Technology Assessment (DNA), and Three Malisland and the subsequent public incluy. Do you think existing matting bars or bid hoc proups are making the Science Caru tumicolosian/?

Kerrowski, I wie be sached winthe secing restituzione weni area operatizzationenti region a maiacuo o conditibility / se long as upman, or societtos with enablenariati tendencies such as Burry Commoner here as anuali restribility as resultanti aug ver lack something. When uniformal distermista invadue by operative uniformal adversariation and by operative weat of indicatoentation enables with a weat of indicatoenablem enables with the weat of indicato-

Otter: What is the proper role of aspart

Kentrowite. It's a invited role but a vital one to make what Karl Popper calls faishable surrements, the kind of statements that are at tak because they stand or fail with the extension.

Among accentiats there's one rule that you ocn t gat away with weltering. You must growned that you must say "the done the must and no more, my wast's fave there the must and no more, my wast's fave the must not not not the other" to all growing about phase option so that other to all you also give a phase option so that othere can approace way results in other.

New extentists do all the bootume if they don't they go topped on thy them parts all conservoes or in the product only pormet Re, write a scherhol goes custed. I'ha community of the peers has no longer bound by their 'furnivesa' rule. People don't held ten to c, and in fact with a MBC tempatonisme the can got all explaintion the dreaming instantial automos that arown't dreaming instantial the peoplement entities?

i submit that sciantific athout should be ensured to the public eems. In the Set area Court, one would have to answer the quastions of expert advectance in public. Geen: Where do examplify metal-leases that to de the issues of assence and public policy op write?

Kaelsowia: Both the OTA and the National Applemy of Sciences (NAS) have ap ponted aspect committees to study fintee saues. But it svery easy to appoint a vectored - committee that will give you promake the ansaed sou ward.

The NAS traditionally ameand that the pipele ware to indive within 5 solid not because is uncleasted by soundle pipel ware an ait a mitizzon. And heyw in teal ware and a mitizzon And heyw in teal bacanse tay indiversity of the mitized and alternative arrange systems tradpied for alternative and the dispirative and how the taken of the dispirative and how the taken of the dispirative.

As for the OTA, I was on a paint that included Damia Do Smore who was them OTAs deputy director it was billed as a debate on the Science Court proposal but the completely enclosed by the said that it is Science Court were etisched to OTA gaving it is creative processed to CM, gaving it is creative processed to CM, gavacenthe tacts, then OTA could early begin to deal with correctivement assess.

Omn: When than should we look for

Kentrowitz For that I three we have to be grateful to those I coll the orrical what betterent - the Reptin Nuders, Rachel Cartons Barry Cerrenovaria, even Jaine Fordas who have bothword to wright a instance that matry young people are inspeed to orrivate them.

"Take to gait to this process who expose any molecover where all surgery or the estimationary experiments as surgery or the estimationary experiments and the estimation of the estimation of the estimation of the estimation of the temps function and the estimation of the estimation

Greet. Some people have said that solversary proceedings may work in law counts but that they don't belong in science.

Kereneese: Trey go on monthly at the inserted to concern but for many kerenet data to work the part local block of body interplace. A server of the trey pressure, it any the what cost preven user the attraction of the posterior approximation of the server and the trey the becoments in the attraction of the posterior to the server and the attraction of the posterior becoments in the attraction of the posterior becoments at the attraction of the posterior asserbation of the posteri

Determining the base of that you diales on its a case manager in a Scence Gourt Kantowitz. The construction of a magnetingktedynamic ower plant i street that we should -not that increa it would work but that its promising anough to be worthwhite. This Department of Energy has taken the position that we should still thivit constructions. spend severity railien dolurs, or more a year on the olds, but they were tault build into a pick priori for all least lively sear. moviel fail i versical keis to algorize my ar gutterrite and have a chance to create searment the people who to became advessing the DOE I wouldn't have all the answers requerting it all were to age "it don't have build the counter the to age "it don't have build the counter the to age "it don't have build beck".

devini II sounds challenging, but cauld 4 offer the same satisfaction as being Bany Commones for example, analyzing the eningy problem in terms of themsedynamic efficiency for the Alex Yorker audionoi? Kentrowitz, And showing how themsedy-

namica leads to socialism? No Tri advocating a more disciplined procedule. As long its Commone's wavparit is writing he a not going to want to submit to crossexamination. The writiwes never do

No remember the controversy in Cambridge over excenteents DKA readershill a Harved/71 was in a New Years I be peerly intere when the battle was on and a molecular biologet—is leader of the proresponding poly-came up to me and wide, "Tou harve Athur we don't need a Science Court for the Wire werning".

The 6 why the procedure must be mandated part as ordinery owl and ominal proceedings as mandated, although the strong don't peed them.

Overv. Any other asamples?

Kinnowia: These was the debate over mass elementry for broast cancer Di John Balat of the National Cancer of Inships was convinced that make X rays were deng meen harm finan good but the pot newhene nymg to persuade the National College of Ratchology So he Ihnualament to convene a Boxinee Court, and new guadelines for contenting were insued

In this case the guidantee cases out of which are not well established at the historic invasions of Math. These procedums are public, both sides are spetered and them in estimate to pretend there is no controversity but gamewightees in or strate-assimilation regime to bootsoop it doeen th the antidentee tradher of the medical probasion.

Overs: But then neither do malpractice suits

Kantrowitz. And even lawyers are having to get used to thee!

Another extension to bolics a high-values power live from somewhere in North Dakada as Minaadonia is went housy to all her societary processing and the societary power and processing and the societary of the the s

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#### UBL First with the pros



curetions of health and surley involved with high-volkege lines a Source Court Was suggested, and with help from the Ford Foundation and the National Bownee Foundation with other process satisfied

Unternalizaj fine tamime processidomi vent me opseloni innicial to acemidiariana terro, and the stelly deceled to would parts a torn of have terro tenediaria este decily quecions threaded to in public (in a almost a considerent de locario mata agrophice) terro deciliaria este decisioni and agrophice terro deciliaria este decisioni and agrophice terro have barreteres (in terros for allocaria quella terro barreteres) (in terros for allocaria constructioni according to a second terros terros este and terros terros terros deal vertinismos bait way botit docen i parto to source.

Owar Manpatel Meed spoke in theor of your title & few years and saying. "We need a new instruction in many dealers that instructions we have are not only unsatufactory. They make a production of secence and a production of the descenmaking process. How would you go about creating a Searca Court whose parameters aren't informed to explay elegage?

Rambowiz As Measi see what we need to a cattle of people who are deviced to the new mathuban and who will by their dominiate to move and the credibility. They should be primarily ocnowined not with any sistem baffree the Seconce Court but simply with hiding the meal competent and erectile people to preve as calls instragates. In till struggling with the appointment mocharism, which has to provide a degree of mmunity from the interests of the Establishment

Green: Heve you been able to do anything as a teacher that might faster the growth of hist cadre?

Reinkeiver: Lest gring i ruggin en soper immedia occes or inclunisity and except all Ammonth in termstep and by learning and and access access subjects and i mi pleased to any final there areas were operweds afflictive limit they seemed to agroup with segretal active skinet distant i incursiwers and accessed excern layor and some activities and accessed excern layor and the layor access and accessed accesses and the betwee uncertainty layor the layor has been uncertainty layor the layor has a some access from control relations.

Maybe some of them if they decide to camping highers nuclear-power plants, will do it by barning anough to make youestem the builders assertions rushead of by climbing over the fence. And maybe, if there a 8 some Coart, some of these wail decide their s where they should be workon.

Ormit: Even the best procedures can t get anomit the fact that we have to make policy doctains in many cases before all the necessary evidence is in Arid in some cases it impossible to prove that there will be fault effects from any menowive power intermission. What pair we do about this?





Burdened by overregulation, budget outs, and red tape, American science needs a

# **PLATFORM** FOR PROGRESS

BY DANIEL S. GREENBERG

In through the total characteristic of total characteristic of total characteristic of

Interest previdential campaigns and any guide, we may eventually hear a few and words about the indupensable contributions of seamon and behndings and the importance of loging car alements community atriang. But when it comes to party alleform if statesheroic coholarship—indi isome imagi netion— to distinguish Republican from Damenal in storesting mattains.

Is all IIID Joincetta who ensures measure for boothed that IIIZ carries who Neon versus Alcovern offered a clear of the southed that IIIZ carries gains comparison of Bistan a Maase accurately observed that There are no clear part of the southed that the southed that parked the relation of the same clear of the southed that the southed that packed by partial in carries in the south of the southed that the packed pack.

PAINTING BY RICHARD HESS

just as true of their speeches while they court voters who live near big research facilities

California Governo-Jarry Brown siluncia od as a bit of a decelorio - Journo frances ton in the decelorio - Journo - Journo ton in the convery constraint in the del speak fervershy in facor of space convilse and solar energy and aganot nuclear power but regardless of shall be over house to skicusis. In was generally demised relies particul occurs in the development particul occurs of the development time paticitient constants with a development of more and sectorizing.

White specifier about the neglect is that few activities on the national sciene are so lightly bound to Weatington's money power and influence as accence and technology are. They probably ank just behind the military services in their dispersionical and the badyral poise. In other behist, this provinst with science of powers.

Our of the 380 billion of iso have being being part the year on respect hand development in this country about 535 billion course directly from the US Treasury routed through a score of government paymores to unversity lubratismes induhal research organization. The govarthal research organization the govarthal research organization. The government bactions, and a few other place Manage research 28 billion.

Government money is even more impor-

Last than those motumestal liquide sugget. Next industrial tims cavability choose reading to opportunities that offer a test consolyrapid payoff - the years is a utiled thanto for many comparison. Therefore, industrial research concentrates on nexttem profil making size shots.

A lot of important research takes for longer than her years, however and over then does not necessarily yeard investations muchal phastronoy and however investigation of the second second second second for less and less. State government put life money into tessarich so the loceter government consorthales (a FBG) money and langer time more speculative second secon

The National Scence Psyndiation report has the select agreement framewail assure 70 parcent of all balance measure in the second scence of the second scence of the second scence of the second scence of the second scence is the second scence is the second scence is the second scence is the second scence of sprattice asserts in the second scence of scence is the second scence of sce

The prime mover in getting money for accence is the President of the United Bases its the President who talks Congress what the country should be doing about semices and technology Though



Congress often puts its own implifit on his dissigns, what comes out of the logislative process generally bears a strong te sentilence to what the President fed into it.

Bince Coopress tored to allow with REU bince Coopress tored to allow with REU bince Coopress tored to allow the Coopress coopress of the Coopress and Coopress of the Internet on Internet/Total Internets of the Internet on Internet/Total Internets of the Internet of the Coopress of the Coopress of the Internet of the

The President's hangesided white house occurses the eprophetic road in Appendia paction on the government presents of the ranager of operations of the president is drift massign of operations appending the strength of the scheme also served as the permittient on scheme also tender as the permittient of scheme research preferences and the object house constraints and research preferences and the object house the interest of the massional solution for delaportation. It scheme that between the interest and the massion housen the interest of t

Presidents set the pace for government supported science even more checkty both in perk banal politics and in entisting science and technology to solve the nation a many problems.

Consider the following. Facility conservative Darykin Exercitive received a log expensive and antibious space program. John F Kennedy adget to project as mage of neocest vigor and technological supplanacy reversal Exercitives is policy and began the Apartis mach failing program—the gastast behnological entogonee in mars heldory.

Lyndon Johnson is graduate of Bouthweit Traiss State College Encycle of the Winke House has meinaut of elife existent and California survensities and decreed a spread he wealth, ptogram. Die maufho han beganspatische oscherman halneal Assettante Laboratory was onstructed in Balane. Noos- not where its California releases assetted

Richard Near asspectors of the Epstein Establishment and its many independent somore advised in government sharpy reduced federal specificg for solentific friening thereby proceptating a clothe in the number of godolates in many docplines. Noor launched an it conceived we concerned as a political play drawing constrained in the solence of the solence of the second se

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CONTRACED FREM INEE: 48

unprecedented there US analocal charapromitings. Biocon the 1970 Nationals Deem and other participants were tenced a optimicitable tablery of environment tents. The tessers (and Daem that have organ entities leaded and the sequences of a biase, senably don't measure up to add base standards. Altrough hes basiy hard's diversity and base marks premain compared table standards. Altrough hes basiy hard's diversity and base that have any compared table standards. Altrough hes basis hard's diversity and bas that assess the test featurement. The process technologies of teatmanents. The process technologies and the heat is communication and the set of technologies.

Site there in the profession below the bestfall of the merican and boltzage bestfall of the merican boltzage bestfall of the merican boltzage become non-term familiar with back with rester material because insures from between over the theorem of the term rest in addition, the between construnet of addition, the between construnet of the start of the term of the term of the addition between the term of the start of the term of the terms of the term of the term of the term construct a terms more term is and the term construct a terms of the terms of the term of the terms of the terms of the terms of the term of the term of the terms of the term of the terms of the ter

O Bina's however feets accention couldn's catholism only inted on theorem sports anyways before a cooptywide asstern their the Owner Contrabas makes to get down to earth posting pergeded as an early age with East Genman do theorem down to earth posting pergeded as an early age with East Genman do theorem and the transmission to a state of the transmission to an early of the microsoft the pergedent contract of the microsoft system cations have

With the Protecting projecticity and and the Protecting projecticity and interface to for Information and and the Information and and and the Information and provide the Information and projection and projection and the Information a

The problem with this kind of early development system is that the young athleses must write their numbers so soon. There aren't blocuase fellow-up programs. After grockabing at age four youngsters often do not controll scientific training and coachung again until high school

Table attract constrong and sales for work over a generation of many of the work over a generation of many of the source over a generation of many of the source over a source of the source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over over a source over a source over a source over a source over over a source over a source over a source over a source over over a source over a source over a source over a source over over a source over over a source over a sourc

Adductly the conception careful outwater and selection of adhetics has made sensus thirdren in professional ranks. Today signs a a fair adherent creatura from his precisions sorts because his has been oralised differ thirly by his sovienment.

Here halfer coucker stranger mays John Mazur dalamswe coordinator for the New York 265. He's had belar programs when young belier loods more opportunities to weightstrag them a tex years ago weightst weightstrag them a tex years ago weightst

Bill Hampton: the dots equipping maninger range. Tablean years and a factory right mich west was urbained of have were all thirty-fau to http://www.mchast.totalik.kast all sected of specimiens - act lead three, boo hundhad fainy face poends. Interface-were wasel idon't have wheating or a nogatory pugthad the netwo generations wants to be able to find the netwo generations wants to be able to find the netwo generations wants to be able to find the netwo generations.

This charge in advalues and co head the most of introduction in the human supcles is it is in the charges of balances may prevention. Teachison will creating things, but this links hundred of backards for dreshift in occur. Or Mantfell safe for dretem charges in a born or to one this lips with the occur. The born or to one this lips of the operation of the safety of the operation of the intervention of the operation of the one that operative beyond process plants need activestic.

Washall elied fostball as an example. A live decodes ago teams had 32 players, who played to both offeres and dataset Today cach position is highly opecialized and each athlets is taken made for the same Machiail angle in of how approximational of selection helpad to bing these changes about

Now you have a one-hundred exercise hands and plays a lot of sports very well hands and plays a lot of sports very well ther you have a two-hundred eventyher toward offensive knownan who deemin have the quickhese but he has built and a lot of momentum four have welly deegent affelder on the same boar. We owned



A lot of cassette makers have probably considered asking Stevic's opimion about their performance. But he's such a perfectionest, they may have been scared off.

Not TDN. TDN. SAV Super Avityn magnetic particle involution and high bis causelle music. No nock is too hot to hendle. Classical music keeps all of ris dynamic range Jazz studies without a hisis. There's hendroom for all the chall ritige and during of mails.

For Science "Hi's a hitle means in achieve that delivers the best sound, for its more, that does the and, "Here's good nation, hit 200 components are charked thousands of times, UTP detectionate for the shell alone. And detection to the shell alone. And SA is guaranteed a livetime - (tough to observe on medicalisate).

 To the webbally executivations TDB consists even factors to perform that to a detect or metabolic re-workness whip samply retrieve it to your bacit deuler or to TDB for a detect replacement.

\* 688 TO& Excelorer Corp. Garden City, N.Y. HOM



phyers now for specific ontena. We look for weight, size forty-yard speed vertoon ump, missio-hoter type upper-body steright, twel-body stringth, and mon. If a phyer has just a lew things to do exceptionally well his performance cupit to be befor.

Despite this specification, an athlete attic part weather body introllection and success disa spect through these determination and taken. Dany Paulit, we sample is a world class body burkler at the improbable denorary on of the testine and wegtang tild pounds in New York list year most symmetrical body in the world to best out the totaway betweentis.

The perit is that ophisms curves or persummore and body type as to based on specific ideas abod which and how im alteres stocks period in the consisting to performance can offer a which offer period and the specific and the specific period and the specific and the specific period and specific and the specific interaction of the Poblicity float for high period and specific and the specific which is the specific w

Apart from tharing and selection, soonce has helped achietes by improving their playing equipment. The space phogram which has been a sports intovidio ever since the development of the hang gider in the 1950s has played a significant role to unconvict attracts equation at

Angorithy strong James A Lood L, an Awatos 2 page a word Envolvemental Matchine Imagezetes (or countrels that head the strong magazetes (or countrels) that packets skeeping bags, and all spanish made from the skeep magazet laad cold in space its arring the bonds account per visio matchine redenation analog correct cold that loop during make worderated.

A new telecon plastic form from NASA that lakes the shape of impressed objects but returns to no grani adaction alfar evaluation 30 percent compression is being used for floatial headpart. Looking forward: intromature plastic training system. Getagrad for zero g use it inconsistions ar ump lithem cells in assistical system.

The success of these NASA devicements has caused some reverbalized dearmed-of problems in tootball, for example, the toam-ined helmate have proved as effective at protecting the water that players have begun using her heads as battering rems agained oppoments with older heimate the immodel of a



head-on crush would bother both players involved but the new helmets allow hugfreemen to all and her heads next easily into the nbs and spines of hafbacks and wide receivers Hampton likers the stutent to a Velowagen getting used by a Cadilac.

Fortunately no such problems have antien with NASA learnined shoes. Terrer size, Jammy Connexs and the New York Kilotish have found that the place, which motids to the exact behap of the water's liceland which doesn't state against the skin, has nealused locatines and injures and has made them better participien

Beyond all the protect advances in theiring atblue selection, not equipment less a realm of possibilities atost line aerith of sports searciss meaken of a politicit athlete through penetic mansulation and drugs. The summit contractivity over the powing athletic performance, through arabolic attends is only a small time indication of the londs of mansulations that mis is alread.

Seconds are homorout composition to leave to increase having a clinical and an athload a suggrossion if taken in huge subtemptid class. When the East German temake athload suggest of any athload and they take suggest on any athload and summers that they take suggest on any athload and summers have been as a suggest on any athload and athload to be any athload athload any athload to be any athload athload athload they be before any any athload athload athload they be before any any athload athload athload at they be before any any athload athload athload at they be before any athload athload athload at the best of the athload at the athload athload at the athload athload at they be the athload athload athload athload athload at the athload athload at the athload athloa

By taking anabolic steroids, writes Dr. H. Howaid, one hopes for improved prolen synthesis in the body and consequent y muscle growth such is would not be possible through physical training store, to matter box interes

The repaired rap popularity of sterovido tasias some concern their the Summer Diproposin Moscow with or wheat the Americans may prove to be a composition among drug contraines. The premove attisched to wrinning and the lune of log money hom commercial and observations are difficulting attraces over down to the high-school well toward teached.

Dr Gabe Mirks in his Sportsmadione Book admits: So pervasive his the practoe become that professional college and even high-school football coaches routines disponse service.

Jain Better who share Ownpach-based openiates, comer the come members of the weights and swemming testin at Ibradius and the set of the set of the set radius for weight and the IDTS Summer Ownpace in Northalail layes. If you waite it the addition the Other Summer Ownpach and the Other Ownpach and Summer Vision and Integration was pather a solation potent of Most and Theory was pather a solation potent of Most and Theory ownpach and the Other Ownpach and the Other Ownpach and Summer Ownpach a

Both Anel and Darbik are convinced the use of statoods is weldspread in the United States. Then it may be asked why hasn't the phenomenon been investigated by medical authorities? Why aren't there

"There are a couple of reasons why? Dardik sayo "The main one is an internal mans it is necessary to someone to give

The outcry against the drugs-which alterents among a host of other ills-has teamor similar maute through genetice means to shift hormone levels set by the ulate the genes you could create a

This has deepened into a question of

Such possibilities i a far in the tuture, ac-Zinder notes though that while these tually what inghtens those people who like be able to do it someday in tab! most

proach to getetic athletic creation that will

plevers, such as guard Doug Ven Horn of

That of course, is science fiction. says an athloto take his coll take a terblized overn take out the fuscieus, and toplace it

spliced champions to appear we can warm curselves with the knowledge that changed but science's impact on all asgenes allow their bodies to attain

what we can do it's not within my compatenters DO



PSYCHOGRAPHICS

CONTINUED FROM PAGE 18

a native/signive me life cips of twerty-free potential guess lates for a potential system. The stow-popular like instant for a potential handhod popular in three due to the local handhod popular and in three due to the local handhod popular and in three due to the local handhod popular in three due to the local handhod popular in the local hand handhod don't boy. If we in focus graves, and the handhod popular is not boy focus, and the handhod popular is the local handhod handhod popular is an another fore of her to the local handhod handhod popular handhod popular is an another fore of her popular because where in and out of bod with men. They went lung her in in

even is the lifety even more when the investventative is and in the lifety of the

Not everypen is improsped by Wensien's pusces has Hielenand divider of Helebrandi Consultanti. Inc., says: The advantising continuing patients was very negative. I parcentally loand Wentalian is no user of viscosing, patients for Wentalian is no to the mechanism, patients for Wentalian is to the mechanism, patients and patients batter to reduct their to TV and the north train association for allo to their mechanism. atomicus implications for lowening the cost of an advertising campleon 1

Why do people respond so negatively? to kery competitive "says Hillebrands" in their a lot of people are instrimining palooss that semisonie could come up with hard data like hart and have it mele some

Since bian wire research will this appled to adverting, is may cognitive supporter has been 0° Horbort Kagman manager of occursel public earlier inaliests at Denarral Electrits since tilled, tools of kagmans one of the workcole publicly histograms on other works of addity to identify which moduler that thinking and which costers magery without theath?

Wendlern's NeuroCommunications Laberstays questify tested a sinea of B.E. s corporate commences for Kingman. A corporate commences for Kingheaving an image and general general beaution of the company method of the heaving an image and general general beat heaving a King of the sine of the ammental memory of beat analyzed the dispose of test or right heaving to the heaving and exclosed and analyzed the dispose of left or right heaving to the first beat we need any sine of the sine of the provided of the sound apprend of the heaving the test beat of the sound apprend of the sine of the sound apprend of the sine of the spin of the sine of the sound apprend of the sine of the spin of the sine of the sound apprend of the sine of the spin of the sine of the spin of the sound apprend of the sine of the spin of the

Their findings emphasized the separation of images and aleval which supports the hypothesis that much of our seponse to both advertising and linewised occurs in the optic hamippion: even when there is a local verbal content. For example, in some of the GLE commercial titilitani safe shared that produce a right-bann response only. Kugatan attributes this to the verb protone weaked by the left. The textsch wisi it traver, in Nilagais. The light come on in Bottalo Stones that more requely engaged both safes of the brain dask with logas.

Is one commercial the mention of Edison a certificate produced a subdem switch host right brean to left. Krugerian interprets the obusin as a standar mochanism subgroating that the element of surprise sets off speculations or a chain of deaa rather than interpretented associations.

If was especially provide that the that images of it is commanded to duced a right-board reports over though some contained wasts while taiters inclaided prist superimposed over video rise activated because the words when not heary rank board words an pair of the potery and board words and on the potery and board words and on the potery and board words and on the potery words are made being processing the same and that the mount operation and

Many possible uses exist for such intermation. If an advantage is trying to sell on the basis of mood, the sight or emotional subcontracus response arousing the left bean and setting off a cognitive process would be a mistake. Binoxid the company be designed to appeal to logic such motion and instance as offen and the company.



mood-evolving imagery might interlena

The locality of viewards to show high right-basin response to Two and part service long. Kragman wroze in a 1979 Bread carding extronal "suggests that in contrast to lataching, this unspec power of the media is to shape the content of people's imaging and in this particular way determine their behavior and that vieward."

If you want to these the consist of packing images, these on yours test backing and the second second second second Andersetal backets backy and more an other second second second second to the back documentation of fees at packing a decarrent time time

This serve of the the offensess between a term of high term of the offense between a term of a hair resp. We there and the term of polarises the term over, the high and the term of term of the term of term of the term of t

And we analyze the data in terms of what it means for our clients---General Motors for instance

Our committeer to the "nature" i stat tend to use on other wans was called by Monisk. Capital says line to the period memboriskis and the period. A call after granring physical appreciation to a long here physical approximation to the mostel physical approximation and use abore physical approximation and approximation develop anterchae, and you can any files the one medity the

Social psychologial William D. Webs now in vice-president al. Needlawn. In Karper and Biasin bekenner frat successful manifeling of the power in Marken and Spectrent hand data. Monatheriaes: Dr. Walta cauteres data densities and the second second second biasing of the traditional was mad to be occurring are not occurring at all Minny hings Shallappent to be traditional the instance and of the population for instance withing it is applied on the instance

If any of this research is going to change our world—and probably all of it will—the most sublig and probably all of it will—the cores from the perceptual ang neering going on at time tria the Weston Group the monothrophosps entrophes used to facmaking the devir generate an already being initial by Dr. Moskewet and others for thture use in packaging policial cardialates but even it perchaptives and policia never merge in the siel world the seques Moskewet is punching up to the concelletation will cartinerly affect the laste and contention the force will califormation as well as the images through which we are encourored to low 4.

Motificant: has already proved that fund exercises and packaging affect our perceptions of a product exertly. Service entry for different products: A chocklast only for different products: A chocklast difference of the exercise of the product of pacies of the exercise of a cancels way pacies of the exercise of a cancel and pacent of the exercise of a cancel and when a cancel and and a cancel and on a summary accel and

One of the aenost thrings Moskowic does, is to make mathematically tangake such intangake qualities an Thiotemiss." Tool fashinded Taxor and matival taxes to doesn't disturb Moskowich that scree pack doesn't disturb Moskowich that scree pack tops in an artificial version than with a recting in an artificial version than with a recting with an artificial version than with a rec-

"Matiwers born indirig out what the oneumer contexters networking out what the oneumer contexters network and converting that into improducts, the eavy. We are transforming product writes into product formulations if the consumer write a natural liable and if the porsumer feels. Introvide with additives testes returns that is what we il give her Leman flavor is lismon flavor, whether you get it from a tipe or from an adult flavorist. The constituents are oblevent but what is perceived as limital flavor is limite have. That is relief.

Nobody s stying you have to use the indiagramshould if the consumer warts a poteto drip with sensitiving unhealthy in t, you don't have to put it in . But we he make their pad quartifying the American Dearn We re failing people how to menufucture it before faster and cheapen."

But why do we need a better polato chip anyway? Aren't the ones we ve got good encuch?

Out of apprecentately 54.000 active geochy certs. The unexage appennation can abook only 0.000 at any given time. Yet the number of brande, items and acces whereign increases it is not because there in the deriver of brands, items and accessing theory in creases. It is not because there is because diversities listen and constant, it was been permitted on the new and intercent their been because diversities to us

Utforkninsky most of us adapt the unapointed tohows with which the massages of adaptitioning selection of the current and the massages of the current and the selection becomes focused on thogs, even when we persolve them as implease should acpointed. As Barraid put is, people are becomes As Barraid put is, people are becomes As Barraid put is, people are becomes and the Scott Control activity of a charactivity of the selection of the the selection of the se





they should have allowed his corpse to commingle with the earth undisturbed they abraid how left him with the less them further unio their unaperional Natitant hearts at the one of which outrace that, he would de

This line of thinking, forwards greas outscle and uses the communicator to your Wigan mission is done

"Why is thet?" one addressioned says

you saying this outrageous thing?"

Because you have pushed limits you have led your way through the excumteramong the stars, Freud says, and so on that can never be used again but that he

What is that?" The same administrator

You won't dwind eme. Freud save 'You dont date do it. I m your last hope. It you atus me down, you know the mession is wards I don't care what you do You are stronly. That is the centrality of your and



members of the Whapparty VI previation eessig staring at hem, warring for him to state, seeming upwerity in the welling.

Serving Freud a ferrous Verrosse medwho has been reconstructed to help you with your difficulties on the Vecan probe. I

They alare at tem The Indroportics en-Froud cays. you must repel the Vegana not do #. The less of the administrations will

Chairs shift The captain applauds leedeng at him. The economistrators have hed to and a star probe is not a ninelaanthlunk through the outlants of apage. Every

Yes. " the captain says gratefully "overything is changed. I tried to tell them --

"Ex too late to tell frem." Freud start Vega and indivance upon the Vegara' citian . and kill every arrais cos of them. Until them

He loves. The applause begins It second here in the deepenne rivelrous colleagues. He basks in the from the stage. Then moves up the ramp

Pacing he explaits the viewscreens so stellations-which he no longer fears stance, almost six full centuries from Vienna. he has found nome qualitest entrier to his revisions it is mossible to say that his final moments are happy or at least as hap of all the others, to a starting termination

Net by the administration. For Finud

But by the Vegan space probes, which magne, was melloctually demaged), but the fire CO

# ANNOUNCING THE BEST OF SCIENCE FICTION

Dend varies of time cells and which as the IIIC DF CAME The Herdia of the Interest and the Herdia of the IIIC DF CAME The Herdia of the Interest and the Herdia of the Herdia of the Interest the Herdia of the Interest and the Herdia of the Herdia Herdia of the Interest and the Herdia of the Herdia scatter of interest and the Herdia of the Herdia of the State of the Herdia of

#### AT YOUR NEWSSTAND OR BY MAIL WITH THE COUPON BELOW



#### THE BEST OF OMNI SCIENCE FICTION

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Arreav-Tera	A real to a comp Power to	<ul> <li>A secon por Lodic"</li> </ul>	

Burt Rutan designs do-it-yourself dreams come true

# RARE BIRD

It doesn't take an expect to see that Burt Russn designs the most beautiful light planes in the sky steek and elegant incamabons of the fantasies that fy in kids daydreams and science fiction By comparison, even the very latest models from the big names-Piper Cessns Beech and the rest-Piper Cube, so alke that If they were mately beautiful. Rutari's planes Invia Play wouldn't matter According to the numbers. rest of the light-plane flock. They By better too carry heaver payloads to maintain. And for all their radical beauty hotehot performance, and economy they are inherently safer of light-plane aviation, state of the art into the future He is a peerless peer

Rip Autan style with Ina Pivo-seator (win Dokast: Right The 100 hp VanEze, Rutan's paradigm: chuses on four wrigs at 13d mph







6Like a latter-day Wright brother Ruten invents airplanes obsessively and almost alone

in the Experimental Avorah Association, when Butart's planes aren't fiving the only whose members design, build, and fly their own planes. At the EAA's annual mideum-Rutan's planes-beginning with the Van-Wiggen, followed by the VerEze and then building is a corrugated metal prefab right the Ourclee-won the Best Daugh award in their debut years in 1979 a VariEas was voted Grand Champion among some 1,500 The entire permanent staff can go for ander

in flying competition, last December a tos Association world closed-ocurse dis-4 800 30 miles nonstop, emphatically

Rutat's fecand genus for coming up with new ideas that fly has been recoobig even preferable, for a plane to fix with back. Rutarts AD-1 is currently trying its pivoting wing at Edwards Air Force Base in

traffic on the field is the turnbleweeds to pe-

The hand-stencied sign on the door proclaims Ruten ARCRAFT FACTORY, but the out of the catalog, with an attached hangar not much bioper Nan a suburban parape together in Ruter is five-seater Defiant with a sold to spare. Older brother Dick, recentily animal from 20 years as an fur Forne and troubleshooter test priot preckepn

Within Rutan's small world, collaboration nonelbelass mense and single-minded Anolaosa in penetal, and Putan airplanes one seems to have much time for anything else: Puten's two mamapes latert at insut one with swept forward and the other in part he admits because of his service. his writes were not amplanes.

He chales at all kinds of defractors California. Meenwhile, in a wind turnel at even at his growing california the tiviaat



Landlex in Virginia, NASA is testing a rack- of tag-time success. When evision buffs cal Putan design for a big agricultural crop and Putan fans drop in at Mourve, he ra duster, dubbed Predator

does rathe way he does it Like a later-day overed. Normally friendly, he taks a put-Wight brother he invertis anoianes obses- naird who has promised him oplor magas in sively and almost alone, collaborating only a national megazine, Every second I mistyears ago, seeking solitude and low rent, there testing my airplanes Puten set up shop on his own at Mojava les At Mojave, Rutan's futunatio fayers share the concrete apron with obsolete tratiformetion over the Manne Deuert Above A huiss that have made their last landing on 240-pound Duckle rests (ghtly under the weg the way to the screp heap. On some days of an earthbound Air Force benefition

likely to bate in the back room. Phone nails from would-be financial ancels co unanting here with you is a second lim not out

He wan't even divert time or energy to menufacture amplanes from his gwn de-

Verliggen-Rozen's Arst, all-wood datage-in

# SOME



signs nor will be lease the designs to obe menufacturers for fear they will make

Butan row thath-assen atlanted design Icense when he was sociest, got a dograe

horizonial stabilizer someomes with a

cated fuelage that serves conventional planes manly as on arm to hold the ball

prototype Detaint, a fwo-passenger two drap-induction withed skill area. of ordpary boht tests, and 1,000 pounds less

Move important, the canard makes By nary plane stalls-loses its iff-when its

mounting his canalid wing at a slightly proachus its stalkno angle while the mart dipps gently back to a safe attrade restor-

another Rulan impovation large vehicul

The sanglets do double choy acting also ventional prolate superght tail. As a reaut. streight and level tests a barked abtude

For the VanEce Rutan also developed w

### FIRESTARTER

closed committees come budget-renewal time. They have their pets in every dispara ment .// Harrison Wankes is their pet in the peech denatment

The administration doesn't mind?

"Don't be nave, my bey Where's good for Warries to good for the Hamson paycho: ogy department which next year will have its very own building. Na meas auriening with more locationy types. And whats good for psych is good for Hamson State College. And for One And all that

Do you thank it is safe?"

They don that it is nawden water to water te it and safe. Gaincey applied. If they have own the algorithms question, they test it on rats and than on convects. You can be sure that what they re putting into you has been put into receipting thes handwed poogle but fore you, whicke inductors have been coretable montreed.

I don't like this business about the

The Shop

"What's The difference?" Andy asked morosely he looked at Cuancey poster of Richard Naxon standing in forst at a charbled up used car Naxon was gamming, and a stubby V for victory poliad up out of sich oliverhed fet. Andy cuaid still basing before the main had basen elected Preadent loss than a year ago.

Well Thoughtmaybe you could use the two hundred dollars that s all

Why are they peying so much? Anyly asked suspectously

Gunney threw up ins hands. Wridy this is the government's treat! Can't you under stand that?"

A wreek lobor he had subawaid a letter failing him he had been accepted and asle ing for his signature on a release form. Presse thing the signation on the Room 100 Jobon Gearweigh Heal on Max 6

He work back own his areaves on the initiality own with the point the Bit. That was within admicrone tapped running the shoulder and a grill vace owner and shgifty husky select. Could borns that it found one with 42 Meter set owner dro.

Some "the spati-burning to hand it to her Protry girl Tall Light autours hair manwal costly cload complexions wearing a prodet-blue sweater and a short start Goodlega Nostockings Casual approxia of the buttle wide

He handed her his pen and sha smiled her thanks. The overhead lights made copper ghits in her har which had been casually led back with a wide while tibbon as she bett over her form accen.

He took his form up to the graduate same and at the front of the room. Thenk you, the G.A. stad, as programmed as Robbe the Robbit. Room Seventy Saturday moments into ordeck. Plasas be on time.

She came out threa or four merutes lates, a few notebooks and a test under her arm She was very pretty indead, and Andy de oddat hisr legs had been worth waring for They were more than good, they were spectacular.

"Oh there you are " she said striking

"Hore I am 1/8 Andy Andy McGee

T in Vicky Tominson. And a little nervou about this Andy Whistifi go on a bad inplo something?

This sounds like profity thild sulf Andevent it is acid, will also acid is different framilite stuffyou goton this stuad or so i se haard. Very smooth very reallow and aciministered under very calm circumstances. They I probably pipe in Chann o unffersion Archiene. Ander summon

Do you know much about LSD? etc asked with a little comprwisp grin which hig liked very much

Very ittle i he admittad i i tred it twoonce low years region coellast year insom ways it made me leel better it cleaned ou my head. At least that's where it in live Abarward a last of old orus just teomete to be gone. But I wouldn't waint to melor to shaudy heat of it i don't like teoling so ou of com'st of mysell. Can Loos you a Dole?

All right "she agreed and they walked over to the Student Union together

He indical piblicity part has Coless, and here specific an alternoom logicities. This wavering here had a few been's togethar at a logitherial. Therefore, there and the boyfwerd. Boorge, had come to a parting of the ways and the wants to assessed, how in hardfaul. He was absoluties togethar and in the object of the Markas segment more. For this particular, the search had good when any togethard the walking term, and the wavernoa determinating of though walk them the warts the search of search.

The G A Isoped a pace of rubber should Andy a am pait above the ellow and and Medie a fast. Andy did the we popped up obligingly He looked away had ing all taken. Two hundred dollars or not he had no unp to watch the number.

Woky was on the next oct drossed in a drevates while blocked and drok-grap stacks. She offered han a strained amile Ha thought again what beautiful autour hear the had how wall werk with ere droct blue type. Then the pick of pain fol kined by duit hear in the em.

There the G A said comfortingly.

These yourself " Andy said. He was no comforted

They were in Room 70 of Jaaon Gaes ineigh Hall updates A doesn cots had been tucklad in country of the college withmany and the failets wolfactures are high probaid up on nonsitrytede fault follows, donting their mining M tables with avoid for everyone and a table thosy with a word for everyone and a table thosy these Wal-start to show anyonal nor Andre though moreclairs.

The graduate acculant was dong some thing also now Repping sound of clatt Andy looked. No it wasn't cloth it was



tape. He was taping the typo against Andy's arm. The needle was slocking into the training your. Better roll to look.

He glenced over at Vicky again instead Here you don, ind?

Okar"

Dr. Wantexs had arrived. He stood between them looking first at Vicky and then at Andy.

You teel some slight pain yos?" He had na accent of any lend less fol all an American regionel one, but he constructed his words in a way Andy associated with English warned as a second language

"Nex" If will peak." He seried benewlently down at Andy In his while lab coat, he commed very half the glassies seemed very small The small and the fall.

Andy asked "When do we shark?"

Or Wantees continued to simile. Do you feel you will altrank?

Shihhmmink Andy sed, graning toolehiy Something was happening to him by God, he was getting high. He was get and off

Everything will be fine. Wanless card and he smiled more widely the passed on Andy could look at the neadle now it club in bother him now Jim a price free he thought Sea my beautiful reading. He laughted

Weky was smaling at her. God she as boasehari He wanted to tell her how beauful she was how her hair waa like copper set afarte Thank you," she said "What a nice complement "Had she said that?" Or had he manual #?

Grosping the tast shields of his mind he aud. 1 think I crapped out on the clustified water Vicky

She sad placetly 'Me too'

Note ight 67

"Nace " she agreed chearmly

Somewhere softwork was crymp aboling hysteroid, the sound rate and left incidenting cyclus. Alw which someon left incidenting cyclus. Alw which someon hand to see which was going on R. Was meneting. Everything had become inferience aways access the mission and the altern creat aways access in the columns. In the Almon and some in the columns in the Almon and some and in the columns in the Almon and some access the an inferening away cleare work? It had his sound class indee teleping out of a whighted to simp

Several of The good pointwise week tools image in domotesic one of the tools that they in a domotesic one of the tools that they are too the several several the set and the too the several the set and the several several the set and the several several tools called a the term and he severale to backberg the several several set of bood were pairing weeks at the several several several to the several several several several too the several several several several too the several several several several too the several several several several several too the too the several severa



Wanless was running in alomo. The eyes at the lad on the cost new looked. We delated peached eggs, Andy noted clenckily rise inclendy.

Then the white costs were all gathered around the cot, and you catalities too be fellow anymore. Directly behind him a chart hung down it showed the quashrants of the hymnobianen Andhylicoloid althrisiwith great interest for a while. Verry is dee researe as Ache Johnson and on Jasoh in

A bloogh hard nose cut of the huddle of while costs, live the hard of a drowing man. The highers were etensived with goes and streets of assue harg from them. The hard smacked the other leaving a blood stain in the shape of a large commit. The chart settled up on 35 toller with a food snapping bond.

Then the oot was lifted [4 was shi mpossible to see the boy who had clawed his even will and east carried from the room

A few manufes (tours? days? years?) later one of the grad assistants came ower to Andy's coll examined his needle and then injected some more of its contents into Andy's mind.

How you beeing yoy? the G A laked balant course he water I a G A to He water I a subart, neve of here water for one thing this guy tooked about hirty-like and that was a table long in the tooth for a stratule student. And for another thing this guy worked for the Stop Andy subden's interes it it was abstand but he know it. And the there is name wat

Andy groped for 4 and he got it The .

He smiled Reizh Baster Good doal

Theel okay he said. How's that other takes?

What other folls a their Anthy-

The one who clawed his eyes out Andy said scronely

Bester smied and patied Andy's hand Patte wavel staff, tub, guy?

No mally Vicky and Tane 6 600

Top think you dol: the G A who was not a G A saud. "You just shared the same ifution. There was a guy ower think by the based who had a muscular neatton something tike a charkey horse. No clawed was No blood."

He started away again

Andy and "My man is a imposed to be share the same ituarian without some prior consultation. He tait, immenterity clower the logic was impectable mirguiable He are not Reach Ranker by the shorts.

Raiph smilled back undeunted "With this drug it's very possible "he said. Titbe back in a bit, pkg/?

Okay Ralph Andy said

the Shop for six years balons that hald been with the FBI for two years he had-

That part wasn't clear And it date t mat still looking down at him and Andy will

but this was deeper and much more won lia to later mean fielder I assem real of all now

itse he began to amile See?' he sed softly "With Lot Six, all kinds of funky things.

He looked over at Vicky and she was lookened She's getting my emotions, he

ibut with not taking -- her mouth's not

Are those really grad aso-stants? She

But what did a matter really?

Nend rong cuil of the huddle of whee

Batter to drift Vicky was looking troubled

Vicky emired uncertainly back. She asked I from the speakers in the celling and that was size much riper than thrises

> were blowing-paper cups, lowels, a had severed. There had been france ofthe grad assistants rearing "Zap tem!



Time had stopped but somehow it

The tios let them off al Albany Arport They want in the little girl in the green parts

tennis rackets The loudspeaker system

'Deckly do I have to?" Charlee asked

Honey I'm used up." he said. We have

He hastated and then said. You know cheeks. It's not don't it's not not the steer

them to keep conting at us either I ex-

Liftle gittin crewn storich parcs and a red see hat If also find been pryind a security eted on what they names seen so they could be paged. But she wasn't onling

said. The bad man were coming and

Charlie stood looking at them and she

nevo/

stalation-that's what Doddy called it the

The word for the Bad Thing clangest et great big Zeloo lighter. And then it had

avel change these

Never mind Daddy's head was hurtre

Sally look I understand how you leef but I can explain everything. Absolutely 1 know



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Address

Echoing loudspeaker Rat of feer in the back of her mind, grawing All the faces were at angelaces. She felfionely environ small grief-sick over her mother even now The was sleaking, but what did fact mether? They had solve her mother a kin.

Bite stapped no the phone bodh at the work har shapped bag checkling. She book was takeng - here G surray was. Dadly and joat pplin we ta the - and collect out though the glass to see whether anyonic was being noney. No cray was. The only phone name was a black wearing perform here was a black wearing perform here was a black wearing perform.

Citaria looked at the pay phone and suddenly showed it

A terie grunt of affort accepted her and anbeit down or har lower too king the way it squeezed under her lawfi. No Trans will no pen revolvad it fall good to show things, and that was another diring that scarod her Suppose she got to kiel this deraperose thag.

She alward again, wry lightly and suideny a tok of orein pouradou all the coudeny. She braid to gat her bag under them, but by the time she old most of this quarters and include and utimes had spewdo onto the floor. She bent over and swept as much as the optid into the blag light and sight out the whild withow

Then she wort on to the next booth. The servicement were still taking in the next booth up the line. He had opened the door again and was protect. Still be the door christ. I did Just ack your brothst if you don't bakes mal Hell-

Charle signed he door shut outing off the signify strang sound of his wood. Show a wate only seven, but she have a more plowhen she heard one. She looked at the phose and a moment later is give up to ohang. This sime she hed hed he bag poorhored per kerly and the carlie association is not on which a bits and/on sound.

The servicemen was gone when she carry out and Charlie want into his booth The seat was skill warm and the ar smalled nostly of cigarette smoke in spale of the fam.

Work money rated with the bag and she wont on to the next one Exister Delgardo sat in a hand mission

Eather Delgarde sait in a hard, pilatile contour char looking up of the colling and smoking. Birch he wise thrikking Shah hards have been been been and falle has and brittle have avait to be por agains and brittle how could you be no one-sail. Buy, he lead changed her mind about the Gild Inneem watchouse youagain bit has on thirty-doy leves and now he was going to Neak for City the Big Apple to now the sight and to the sim-

gies bars, And when he came back. Sally and a bais to be pois apply memility to hear any to be more apply memility to hear-apy representations and about dans wet hates begins of Manahon. Profes sally Backhon was prove to bur dans ably Backhon was prove to bur dans ably beaked and analy a control the more phase a wascedamy if served her more aphoneschem beaker if all was writted to Edos balganto would be drawing an amily apole that we the first if the waschable.

Eddar's half-seenthal, half-pleathni chain of daydreams was broken by a strango feeling of warabit coming from his reet, it was as if the floor had souddrivy heated ap ton degrees. And accompanying this was a strange but not completing untamatar anal in of something terrang, but something singeng, maybe?

He opened his lipsi: and the Wall thights saw was that list by an above how be oncouing around over by the phone booths, and little grit seven or addit years old, tooking audy rapped out. Now the was carrying a big paper bag, carrying it by the bottom at it a wave full of anocenes or something.

Buthisfeet that was the thing. They were no know warm. They ware tool

Eddle looked down and screemed, Godematry Jevessen!

Has shapen works on fra

Eadle leaped to his feet. Heads turned Some worken saw what wish happening and yelled in allium Tao security guinot who had been reading with an Allegheny Arines table: tesk looked over to lear what was earn on

Note of which meets doodly-square to Elske Desparts Messayliti of Sally Black form and the service of loss south the write the latitude through the hermed the array and the service of the service of the service granting across the con-souther the service strains is south we closer and the service writes a south we closer and the service whose tensors of the service and the service whose tensors of the service and service whose tensors of the service and service whose tensors of the service and service and the service and the service and service whose tensors of the service and service and the service and the service and service and the service and the service and service and the service and the service and service

A young woman were coming out of other the statis, here in tructuical aphotone withit, and sha was adjusting her undersitis. Sha see Ecolose the functions and shall and a subscription of the statistical approximation inggenetic denormously. There was a fastistic of Water was here. The der Water going on? from the leve other occupted table 16 data wangs pack all the way and listich. Here applied approximation of the statist if multitum the subscription of the statist if multitum the subscription of the statist if the applied body of statistics of the statist if the there was a histing sound and a transitable bollow of station.

The two security guards burst in

Held I you in there? One of them ched to had drawn his gun. Ceme out of there with your hands laced on Kip of your head?

Eddle Deigende snanled DO

be concluded read month

#### 

NO BEAM ISON COLLEGE AND

Puth the control knob and she signaled that the appention of her daughter had larred down the volume

Attraugh the relt of us doll heard the clicks at that moment Ruth's auditory evoked response disappeared?

"That's a wrnarl ' cried Peter

Therewild done if Ruth saw Twas child at school i laved to jurn oil the tracher's vectors to that when she taked 10 see her lige moung and not hear her javeking i also terrentiese watching my mohlers a use stematise watching in word she was saying She'd say to the "Repaid what free and said but (couldn')

How had Ruth managed to block har vsual and worknow weeked asponeas? Dr ferences and I concluded she probatily had an unusually leen ability to focus har attention on one image while shufting out everything dise around her.

Dur recalls showed that when Ruft was soong mothering an uppartion her brain meetere an wald when proceiving a live person. I recalled in suscher all most once saying "Neura never creates just one in sitisce all anything" and conclusted there must be other people whose brains have senter capatities.

How trappentry do such responses no isodo the boot information is soma i form a consust to industrial balavieri (488 and 1086) they a constraints of the focustry to Perchasal Research in Englished which adousd 17 (2000) the comparison and the solution of the constraints of the comparison and the solution is the industrial additional the solution is been comparison and the solution is been additioned which the solution is been additioned which the solution is used which improvements to firm and you used and the solution is the solution is been additioned which are not during the industrial conserver.

About one in ten anawated Yoo Some sepandents reported more than one such appointed to the Report of the Cantos of Maluptembers, the resolution of the Cantos of Maluptembers, the resolution of the postassavely that the reported mit. Depend a tair sample and that the Sathstool proportion asswer on the Sathstool proportion asswer on the Sathstool proportion asswer on the Sathstool proportion assessment persolution.

Under what circuinstances do appentional aspenances occur? No one snows but there is some evidence in Ruth's case that she tended to allo into trances un aware and in those trances was likely to haltocrate.

The story of Ruth suggests the possibility has a symptom such as for which subtions can beet be seen as expressing an unrecognized latent, not a hand story Perhaps renous mental and own physical deposes are manifestations of cogolithers has believe could learn to esplor DO

Messer Schapmon is an American psychiatro who have and practices in London. He expenimpain with appendents are obtailed in A's book The Stary of Rulin. **IBLE** 

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Kannowski, Unoritativy is nothing hear Weve shares local with c. What is new is that new the amost sum is phrased in soment occurs of taxes its set free states of the mediocating taxes is the states of taxes of the states of the states of the states of the Weight set of the states of the states of the local for about on other taxes of the states for a for about on other taxes. The states for the states of the states of the states of the taxes of the states of the states of the states were states of the states of the states of the weight of the states of

The same is true of ineversibility Werke often told that we te about to let a game out of the boffle, open Pandon's box, and so forth. We ve asways lived with ineversibility for You couldn't have revenied the discouery of he

Open: Change is so rapid loday that miny people send to idealize the past. to them that we lead in perfect ecological harmony up until the Industrial Revolution

Kankowste the a persistent myth hom Genese to Jaan-Jacques Roussesu the psychology of Eden And & counterpants as unequesten of disase. There is a book by a Brinth antibechnologist cafed A Thousend Desecon, wil of them safes World Werl To ere, a chaster something like that war itsef, or the Black Deeth me many people would rather emages some secontenant-DNA plague than consider how public-health technology and belogy have eliminated one real plague after another

The tools of the whitechnological of backage polary bits can see them to the share backage polary bits can see them to the share backage backage backets against the conalignment that some workshare backage backage

Onver Waan I Destowsky's contemporary Marx optimistic about science and technology?

Representative way much to it Mars could have some of the antinochrosponic statemersmande by his ubactigutal haves in the Western wards in die schoolden Thereis nie sezon why politios struct meas one antigechnological instead. They should aske and cohomologi tim is use progeneration of indensity. It is ni use progeneration of indensity tim is use progeneration of indensity. It is not use progeneration of indensity tim is use probearty/sits containes without a vegoescely adversaria beforebag.

Once Maybe the difference is that Mark wait shi uble to see science as section



tomary, while many people today associate a with governments industry, and weep ross. Take the later whose applications, you've been explaining for along time. Most of the R and D onlistens now seems to have military overtranse.

Kentrowit: Their bycasse we're bocked offhorth echarposibilitios Twe had the atmosphere of advantarous technology body that we had their yellow body body ness presented by high pooleked laters appearing back of a store provision. The other then an advacate for later provision the other options burnhas it later provision the other options burnhas it later a pool charocet

Consider the proposal that we discove of inclusivation yieldicing inclusion on more do that, lefs skip you'd insait on no more more would fail and spread the existence area would fail and spread the existence area would fail and spread the existence areas and their handled to the existence areas of the first series issuecting during patisation should be to make some that exist in a negrity vehicle to make some that exist in a memory would be to make source that exist in the proposal existence.

How expensive would such is test programibe? Notivery if you had laser propulsion. I'm prefly sure you couldn't afford it with rockuts even if they were reliable encuch.

Deer "war Mill carlagge Hany Kort Nos suggesto that the same nuclearwave disposal scheme could be carted our wards an electromignitis Lauroher it would song telephone pole-surel week coppies on theory would bere lies a coppies on theory would bere lies a mean Africa country the paroscharts of means. Afric country the spread and castameteleux Kelm control bold hard in and castameteleux Kelm control bold that in the second second second second second parts in the early costamile that that is not been and the costameteleux that that is a costameteleux that the second seco

Remove: The reason's terms units bachcard promove, but notice with the Net that schemas promove, but notice with the lead schema back with a statuct on a solid schemas size with a schemas solid schemas submitter solid schemas size of the size schemas of the schemas schemas schemas solid schemas size schemas solid schemas size schemas solid schemas schemas schemas solid schemas schemas schemas solid schemas sch

I with likew of a better way to proceed, but I don't live heard the suggestion that we should mediate these source, thyne to achieve a placed atmosphere in which people will give and take. The Mouble is that in modeled negotiations each tode wave a life but in ways that will but its cacata Isaid. You don't know that apperly's best interests an samed by those compromises because the procedure is manscatata. You don it know why your opponent gave in on the pertinative that one I don't want a consensus at all costs. I want to know the facts

Orter Bo you trust the revelatory power of agaments amed at votory more than that of regotistors?

Kardowska: Exactly I respect the power of the schemosy procedule to bring out what Oliver Wandel Holmes called the "natiou tale major prefrise." These permissions all around us in issues of science and lactinology, and they are exactly what the Science Occur is infranced to unawith

Const. The much rules have you had in postication of the classification and a set of the select Karritowitz. I sell cut some time agains per liables has good lisened a direnes. Haves listeness and Edwards have the the Second people mound directual to them in the Second people mound directual to them on segue tables, whether they to in agreement, as on rule version of what's good for the Listenes Sectors. Whether they to in agreement, as on rule version of the sectors.

When I walk summary the lowest lab I had a cattern of dring with them once a worth to so, and I kept upma the data on m. At first the fourth is drinked to annexit bockuse the had devoted trimait as moved to worth the scentch prenight by good in the world. After a while, though, perhaps bockuse of the growth of annixational power administration to see that the ceeded the cost!

Ethneet—well, Ethnert is a delightful periodic, built's wert heart og ethne to legan to you. I haart to ben node to make an me periodic of the in many passed of comesta to the sould also to grant and the source of the source of the source of the source of the constant of the source of the source of the constant of the source of the source of the source of the why to d have to stag and lasen term for an four about the Source to source of the source source of the source of the source of the source source of the sourc

To alite links vary thuch to persuado Philip Monitori of the importance of the Sciences Court Holl apprend is a good-dat, hall spin a lister or pelition for a that to temp the power to bazim—and I make most hai inteence buc his moleculat power—on this make (whethon my mind a earropotent as the clearmament issues has working on) world be worken hill.

Crewit Du you ever get discouringed about the prospects of success? Its beam more than Mitera years since you began, and certainly these are many more public amass involving soletions and lacticelegy, but progress as will allow.

Kantowitz: No Tim not al all discourspot The held for inner ways of managing technology lepps growing — and it seems tome that nose airdinate people, whether through the Science Court or some other mechanism (94%) Thatkie was Dr Antomate DO

# NEXTOMU



CHECT

BONITY IN BIYOUT - bit you have the the fuscance on developing is spacehisting of the court of the the kinds in additional well according to the bits of the court of a to online's of the court of the court of the state of the bits of the court of the half of the kinds of the bits of the court of the state of the court of the indigeneous commute that begutted than the bits as the development of the indigeneous commute the bits by the the bits of the bits of the bits of the indigeneous commute the bits by the state of the bits of the bits of the out of the bits of the out of the bits of the b

THE ELECTRONEC CHARDEN – Presente Louid and don't charge the charges benerghical Charges and the electronic and and the charges the charges Age while Minimum of plantaments the an investing approximation protocal days while the charges and the charges are charges and the promotive study and charges the charges are only only the charges of the promotive study and charges the charges are only of the charge study of the plant the charges of the charges are only the charges of the plantament of the electronic the Ward of Charges The charges are charges to the charge of the electronic the Ward of Charges The charges of the study of the charges of the charges of the ward of Charges of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the study of the charges of the charges of the charges of the charges of the study of the charges of the study of the charges of the charges

BCL-MORE 20xCs—Is unmarging learning the definition of the subject to the set of the

Unstantial LUMINATIONS — In August Once show how joday a visual inclusions as unstantial characterization of the state of the state of the state and generative characterization of the state of the state of the state and generative characterization of logit and generative metabolism (Synchronic logits) and states the brokes and mortal Disposition display and generative metabolism (Synchronic Characterization) and state and generative metabolism (Synchronic logits) and the the brokes and mortal Disposition display and generative metabolism (Synchronic Characterization) and state and state and state of the state logits).

SCIENCE FICTION -- The accoding conclusion of a two part accorpt from Dephan King's more Aresteart highlights our Acquait selection. Also appearing well bol all for starty by Wittain Robertwise an author on usually accounted with instrucfection. The Carlo Sinot's a delegified extegrition (Divis Edition edito), Robert Startwise metrics readops to scalar & advancement haters in The Future Lock'. PLATFORM

CONTINUED HIGH PROVIDE

money from other heids of biomedical research. Then without warning he abaiisted the White Hause science office contending that his presidency didn't require on-board science advice.

Canad Ford warned hat Noon's budget outs---oregounded by mitston--had let American science in a shake condition sought be budget boots each year to rebudit the financel heath of basic research find in collaboration with Congressi allo vasitabilitati the Whet House science of Noc. Itos restoring sciences influence in preadential orbits.

Jammy Canan cares to office undecoded about whofter he wanted a science advisar at all Three months went by balow has bled the post Yet abor the slow beginning he has canned on Ford & budget poleces for science and has also acted to establish closer inkis between R&D is industry and academe

From Inserfrower through Carlaer Theos scence-elded actions all hard maps in pacts, both on the apartilla community and on the application of scence and bothology to acid international concerns as regional economic development health and actuation. We nove of theos scenceincluding, such was endeavors as the mode-landing sprojem and the walk on carbor-received any roloce during the election comparigns that preceded their unrelling Why?

One major cause in the flation of experism the belief that countific and tackneal assues are so complex that orderary people can't intelligently judge them. Order/ connected is theleeing that soonthe maximum altigenet that they stoud be decided according to objective informed crease safer than by the horse swapping of convertional adoltics.

In a practicul carse, however it almost coment matter way variably all candidates beed solvers and lecthology. Their negdence waiterer is cause in two coeffs to focus and in the nation by and tagge almost waiterer is to cause in two coeffs to focus and in the nation by and tagge includents in the result of the tagger and the coefficient of the tagger and the coefficient of the tagger and the coefficient of the tagger tagger and in their second program increases and their second program increases and their second program increases and their second program.

We ve spent the past these motifies can subing withing figures insocence and poitost and examining the volumetous records of congressional controlleus, and offeet public bodies. From this inpury we add held what we believe are the ten most incollarst assues in contemporary science.



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and technology and their relations with the government. We we speeded out these is seen indetest and to sech we we appended a basit plank. We toops the following Ormy Source Platform will encourage a long mendage discussion of these secure by the containdest for the presidency.

 Upprodicibilis, Instanti receptable, Inschations in generment augent are a continuing plaque on science and tachnology Research proposition takes years to complete but the government budget from years to year autoload by compressional independence and the budget science and the science and science and the science and th

In late March a suiter hudge only decembing the fundamentation of a basis of terms to the fundamentation of a basis to be a set of the set of the set of the and the set of the set of the set of the grant marks the before they were to the mark room measure before they were to grant the set of the set of the grant the set of the set of the set of the set of the provide the set of the

It is impossible to link there shifts to any rational process instance needs or or curretances in the disciplines. Between centralized planning and what now borders on choice, we must find a meddle and.

Hered Agrees tomer child of the Loo Alamos Sciencific Laboratory in New Messos expressed the feetings of many basedness serveral years ago when he composed of managers who texture more and more detail yubilitation and guisamteed speedules will in the not too-distinct water possion moreorist and technology

Our platform plack. Dreatically recluce the paperwork that the lecteral govorrment receases of the scientific commanity.

Universities the home of most of contrastic investment have stupped growing and will not expended again to meany terms. These heaving infinite capacitatives for young tessacchers to begin their solutions; the second provide the second provides the second provides the second provides and provides the second provides and provides the second provides and provides and experiment optimes and provides and provides and provides and provides and provides and provides and experiment.

years would be needed to maintain a healthy flow of young Ph D s into the universities

The council has a modest prescription for the problem a long term program of Resolution Excellence Awards designed to learnot the careers of promising young scerituals whose opportunities are now limited by the delath of academic operangs. The total cont would be only 8381 million own the nod 80 week.

Our platform plank. The federal government, in its own interest, ohould tund a program similar to the NRC's proposal for the duration of the oursert allowdown in acia damic thing.

 Tort budgets have melle the American specifies controller way causes in the cell yakes. Doctaral students scele coufeel tables and blend alloys can subcauge a projects and blend alloys can subcauge a calser ballow the begins. This contenues being extends to the agencies that support the search the budgets that support the search the budgets that support a strong order black on the lace.

Scarrists however have made some of her most notable advances by buckers he bide by not playing it sale wheth hadded there is explicit recognition that long-bid tosearch at important and must be beniced by the more to succost it.

Cur platform planis to stranulate creative research, each federal agency must set aside 1 or 2 percent of its basic research budget for innovative projects outside the burnsurger management

 The fieldest powerment has made the contribut contributive entrely too dependent or Washington's where: We need to diversity the support of science. Our base otherce may be to ental private industry which once performed much base or search and heavily supported science in the unversities.

Our platform plank. Devela tax incentives that ancourtage industry to spend more tor scientific rosearch.

 Absignt backget cuts and body sittle have copside the space program. The need to aption lands from data gragestical compensities to design in the space alludas proper. These worsened an interest yennow advitme involutional base tilter strengt in data for the organizational base tilter strengt in data for a logitarional base tilter and tilter and and and instrements.

Our plotterm plank. The expertance of space for our retoons security and general well being dictates that we expend the space program assure it long-term sup port and insulate it against disruptive changes in 18 budget

 In an era of slow growth or no growth the nation cannot afford to distribute its scienthic resources according to park kernel politics. Yet the aging of existing facilities and the development of new scientific inalruments now knoe us to requip intruction American actiences. We must accept the fact that a few large actientific facilities are now effective than many small ones.

Our platterts plank. Government agen cets should fund national canters for especially repensive equipment and reputal centers for less cesity facilities.

 Solar mergy could contribute much to solving themations energy obstrats. Once the ecolomical has been bell in the polybiol-free immune to forque discuption my newable and versiente. Though hands for tool an research have increasing man rot been pursued with the interestly and resources in clearly warmants.

Our platterm plank. The federal government must promote solar energy in all poor solar ways from supporting busic revearch to developing rolar technologies and creating face recentrations for their installation.

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 Mean and the period counter specific means thanks in peot docates specific of the ensuicit have helped tech to case in econym. Commonical availan issue and onlike means million y means and politike means that the total y means and politike means that organize that all to dwith all million than Means y means and politike means that organize that assigned hard political that organize that assigned hard political that politike political that the thorehold that politike political.

Our platform plank. Semulating the rahonal docatory should new envorg the top prometers of the national socially exemute altart. Programs should be devised to ontrue that indiangs of polaritat value exitips after other sectors of the economy.

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Our platform plank. Soence and technology ant an integral part of our efforts to and the economies of developing nations the must strongly support any effort to focust Amonga reasons or the goal

Thereyou have the Onus Science Place 1001 We also the candidates to examing these issues and write here to incorporate any place, and the own plations. At the whity head leach candidate must explane south at the write program of our mations will not as the write program. Our matmetal south as the write program. Our matmetal south max, our out on program. It has been all the fact, our out on program. It has been all the fact, our out on program.



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In statistic of nucleia-power plant to forly when the polybodity of a classicphic accularies were leave the events of comaccularies were leave to the events of comtension of the states of the nucleis power takes of wheth states of the nucleis power regressing plants as safe approximate in states of the states of the nucleis power weights that all balan approximates the transing events of the states and the states of the states of the nuclei plants in power to states of the nuclei plants in power to the states of the states and the states of the time addition of classings takes and the based of the classing code be

So what can we do a prevent in national catacity in The answer is to propared to device an asteroid we would need to device a payler hall could alker the path of an address and youn fair is given only a like days notice (shough we might) have mean working at the assistance of the mean working at the assistance of the mean working of the assistance of the mean working of the mean of the should be been the mean of the mean of the should be been the mean and the mean of the should be been the mean of the should be been on the trans. However, the

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About 2 officin years ago produity there for sposed on Taim's a large and there for sposed on Taim's a large and there for provide the second and the sposed of the sposed

Whather or not we go to the exteroids they il come to us. Will we be ready? DO

RARE BIRD

CONTINUED FROM FAGE KA

of ngid plastic form. The builder samply conversitive constraint found blocks with a not write, brins, it with a stractpaper. The beinglass is cut from rolls with randpaper. The beinglass is cut from rolls with randpaper. The beinglass drass fabric, and the abovy rosin goes on with a pre-through

The construction of the second second

The solution who warris the most for the least most to go in Ramins Danses. Designed, basi and tested during a the cricins in the summer and static till R27 the Daptice was inspered by a low spheric low-index angins and guiden takets. To inside its pharant and in-most the engineer inside its pharant and in-most the engineer period sectors and guiden the static most of the sector sectors and a sector the period sectors and a sector the sectors had no execute hostigower to spond on unreconserve ward for stan.

Puterh solution is a angle-sealt singleargine foar and bleegies a toriner that weight 240 pounds engine and all. The Grocke or to be picked up by the fail and wholde around on its features and with a the angle as a shopping part is of a will dary a useful based plats and tele equal to insome empty weight ourses at 120 million on a outher of apoline. and go 80 million on a outher of apoline.

The Opicitie was hardly arbitrate when haten redd his interest in the project to his pathons to device hannel to a much mean arbitrate and beauting the seasoning in twoorgans waster of the Vinitica aginy remed Defart. The Defart for the list time pulls factor in competition with he big names in a small planes for the very inchest part of the borring greated waster market.

We had one area." Butan says Tomake a twin engine plane that would be highperformance. Two cost. and sale. Those three qualities inad nover been combined in a single airplane before. Inheriting all this Werklere's serrodynamic wrbuds. The pro-

Experience and a constraint the least conventional light terms. Categoried is Guarmann reve Coops, for example a beland crimics and crisics 25 percent tasks with maximum climb tail of 2000 board 200 mpt. Carrying his addition board 200 mpt. Carrying his addition board 200 mpt. Carrying his addition that charge with only 100 percent has charge with only 100 percent percent and a production writish of to addit \$100000 well bases the proceed conventional signal has

For stating too, no conventional timi can touch the Defaunt Like the single engine term, the Defaunt is infriendly advanting stable stall-proof and responsive thanks to so careful and weights in addition, on his very timit term Rotan comparative kiminated the infrarer safety polition of of convertional texim provides of of convertional texim provides of of convertional texima provides of set operational set.

With regimes muscled anywrite cally or the encys, the countercount lens that loses power from one engine workship locations underpowered in a dwishely unbialized Exercised scalar conditions takes speet and under control of the power locations offset of used in the power locations where it counds the same the plane has a major diarsegues the posterior of the major diarsegues the posterior any says the ryneer.

The things that a pick has to do is a conventional two." Fusion says. These avers awar lends for on this allogation. In concentry our rule having the control avers observed on the length for the having the control of the set of the control haven in their allong the control avers one pulling the control when the other pulling the control when the pulling the control have to whentie with minimum rule there are one other other the pulling the control have pulling the control of the other.

Putants two-platemper livin weights no more than conventional single-origine planes powered by the same (sporting angine Evenichial-power the Defanitician confinue its based) climb, and even fum, without any emerconcy procedures

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But pie editions innain miniscule anywhere them 300 to 1.550 options with the avanue primi non at about .500 Many of drogop tithe seef load androe and become initiate calabedo s noms. These are new auad as small additional printing. The more external initiate and the to those, more external holps thoses. Or stopped more than the table of the table of the more external holps thoses. Or stopped more than the scale and or is not be different and scale and different and scale and different and scale and different and differe

And to the topole mends intensity than the present-The Walkou of And Labor 22 about strongs with an introduction by the strong of the strong of the strong and these with introductors by Ultern and Macouch and Robert Shucking in the Anth Keam (Intensity and the Strong Anth Keam (Intensity and the Strong Antheory Strong Strong Strong Str FUZZ BUSTERS

# PEOPLE

By Dick Teres

Insughout treat of March and Aprilatithe U.B. dissect ourst in Lee Angeles. Ben Blowa Draw a encoulee addee and Harlan Elligen the well-known white of operazitative focon wire engaged in litigation against the ABC bioindebonetbook and Taxamous Plotuees for operaged in ritigation against the ABC

In 1999 Block and Illicon worke a short fory together called "Biolog partnering a videoux offset copy with a man social procession of the strain social procession of the strain social social procession of the strain social social correst forms in cost was made. Mean factor biolog were occassionally called low the most was made. Mean factor hereos: Bielo "Avecations to war here biolog were accessionally called low the biological companying for the biat gran."

But not for the story libitly of them thought it had potentials as it to sense Elision, who had werked in TV for 15 years was approached by an independent body-dow company, which prosented Body and Elision is skal to ABC. The netwith entimeter a telepisy to fairs is good. This basis of the research unclear of the res Add comparison the Balls percent in the Add comparison the Balls percent while thought much of the sever'. New works methods leaved a sine produced by intiting Add, and a sine produced and any intiting Add, and a sine produced the several sector and any sector beginner called rules (but any sector experiment) model or in this case a thread call provide a several the experiment and there are defined as the experiment in model or consyndia thread and provide by consyndia of the called rules of the add there are any settor thread and provide and the add there are any settor and the settor and the settor and the settor and the settor add the settor and the settor add the sett

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Because of the spaceal aspect of the case much of the testmony was grean by



Harian Electr outputs countrons. Stop that man his is the one who shed to ensuremente

expert witholder, writen such as Proviteritari (Devel Norman Spinned (The Yon Dhann) und Devel General (Mhon Paster With Devel General (Mhon Asserbie) and sever other set of the academics such as David N. Barnuekan and George Galifey. An instruct assis to the inferiorate within Gulfuy a Favaaeaanop directive with the bard to the directive such with the bard to the directive such as the bard supporties in an analyzing scanso-action histophist to an ensety he read by Hallion Directive such as the observation

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The late-re-secret for horbalihato to stand by Biocaria Jard Dayles the shared by Biocaria Jard Dayles the shared before counsil to ABC/Paramosci Darge ai and bases Ellision and Dayle tapare adjunct to Olivia Sissual antimatin of the Davles barrol Bioca. Iseng Devisi Trust out al accuracy grain and biocaria. Biocaria the result of the one airo biocaria di the tengo the removement biocaria biocaria and the common biocaria and the tengo the removement biocaria biocaria. The second the common way of the biocarian in related to and the biocaria biocarian and the charmon biol biocaria biocarian and the charmon biocaria.

The verdict? For the plantifs -\$337,000, roughly half companisatory damages and half punitive damages

Networkstanding the cases legal agrificance Elison speeking with unchatraciestate understatement found firs own significance forth autoeme. This
Poor Edward Tellier: Everyone seems out to of Three Mile Island advertisement of a 7 1979 a few weeks after the Three Mile baland accedant he was in Weshindlon page od in the Well Sheat Journal "that I

unikely neme of Jerry Public -- no selation While Taller was not insured the time the and a \$500 hrs

When minup according to Lebowitz your involved in hopeless love affairs -- he found

Since the story brake. Liebowitz's phone heren't stopped anging. Reporters from all

and patients. Even here there may be a

disadack, however as a love medication

After attending the unnual Norwascofi science-faction convertion in Seattle, Washnoton, recently writer Theadore Slurgeon

Orms: is science feton changing?

Pournelie and Larry Never? They ve withon thre hard science fiction, and shill do sepa-

### Onry How and

Sharpoon Well, you know Jerry's been the

Only Do you have any fermine among the



Sturgeon Well, Ster Tex for one. That was episodes ( Shore Leave and Amos sames, phily the Texisies would have under-

Orner What about Star Wars?

Stargeon Loved # It was completely con-

Crew Have you done any move somplis?

Clean? Getting back to the real world what

Stargeon: Two frings mainly The first is meroelectronics which is charging the incuch computer terminals. They won't

before they get better We may lind cur

Clease: You are former connected with Stur

Sturgeon [lauphing] Oh yes! I was at an SF convention softwarms in the 1950s and I of paper stuck of through them. We'll be sust looked at him and replied. Well rankty perpert of enervitieso is grap. Little choil know that it would become a low OO

What got me to write this ANAGRAM? Something A MAG RAN

# COMPETITION

By Scot Morns

Construction Computing submonormal management (Computing States) and the substruction of the subcomputing subcomputing subcomputing substruction of the subcomputing subcomputing substruction of the subtruction of the substruction of the subsub

Properties was mentalized the most common west provide the data and the second second

A few anagrams looked so good that we subject they were not original. From Mediam Orale – Danie radium, Eliae Howe (mentor of the sewing machine) – Tapwis hole, Vellaere – Towe art, and Elimest Publisher, Barrisee of Initiae.

Also as we have carrie to expect many existent in to durater up the judge The Anagamanagama at the top of the page carrie from Articu Landre of San Francisco. Dit was "Orme Magazane bootrne D, anazing mana, and Gaaran, mon ane' Games in Orme was passpool bootrne M, assang mana, and Gaaran. Bootrne M, assang pageterook of Lecenter Manyon-, Risad only Oneis

All in all, a surprisingly good assortment. Congridulations to all.

### SPAND PRIZE WINNER (\$100

U.S. Space Shutle Program— Support us Telegram cauhi — Strad V Brase, Freuro, Cauli

#### HUNNEPPS-UP (\$25)

Arno Penalas and Robert Weach (Robel Prize winners)— An and Rob winnest Oxio prizes

- Ron Neisen Stevenswile, Mich

Tenor Luciano Pavarotti -- Top vocal Titan in our ens

-Rocco Matera Brooklyn N3

New Year's Receivison -- Only we aren't serious

-JAN HOTSON BROOMMAR COND

-Richard Skelenar East Hardow Cove

Diniti I Mandolwar -- I m element donder -- (20118 Pullimene: San Francisco, Calif

Many a Sad Heart Can Whisper My Prayer – A Meny Christmas and a Happy New Year – Robert T Warnanght, New Rochelle, N Y

Widespread Livertock Mutitations --Visited animal slow took type, cuds --E M Gommies Eagle Pass. 3e

MND anegramment, but IM ON to a preby good one I thought up DN MI own Make Asmery - Asmissismos, Spanish for Thus we become emoty?

I NO MI anagram is not a description of Mr. Asimovis works: but it is the best I could do for the MONI

-John D Boeinght, Garant Cakf

Ptrme Minister Pierce Elliott Tauduau – I m Ratriad al rule until time is propore - Ratt McGean / Joydan Oct. Canada

## HONOPAGLE MENTION

One Small Step for a Man. One Giont Leop for Mankerd -- NASA PA. Allist free, Man and LM OK. Prefer moon to Teng -- Robert G. Westmoroland' Ozark. Als

Watson and Crick -- Cracks DNA to win -- Thomas D legola, Sav Francisco Call and Shan Lydy Mt. Zon It

Cint Eastwood -- Old West action -- George Landis, Vessia, Calif

Space Age Man Notion -- Peace among rations

-Doloen Michael Langley B.C. Canade

Western Union -- No unsert wire -- Rozhole Mokey Vista Calif

The National Aeronautos and Space Administration—Man actions to deep on and militer lange/star peace —Ones Scherother Bakenore Md

Siephen Bondheim -- He opens the minds -- Jon Phote: Same Moreco. Cold

Star Trek the Motion Picture -- Rocket ship team return to it

-D Clementz Fint Mich

Statue of Liberty -- Built to stay free -- Mark Howard, Lot Argelet, Cell

Robert W Bursen -- Bost burner new -- Next Marcinson, Witeaton, Mic

E von Dänken UFO Theory-O invent one hokey fraud

-Junny Heynolds, LLObock, Tex

Charlots of the Gods? -- It's good for the cash

-J Shee Bordentown, N J

-FJ Heely Por Coguitern B.C. Canada

Mother Thuresa -- Rest at her horne -- Jack Listen Vervoo Calif

Star Trek the Nowe - is the TV rot remains - Whiter Acts, Charlotterania, Va

Einstein's General Theory of Relativity-

Graat ione traveler to infinity? His he is! - Grant Stroup, Bend Ore

Gut Ol Company - O. go till up my can - Tan Basmutten, Boxe, Idaho

Nuclear Radiation - I nice to run a land - David S. Cohen, Upper Montcisic N J

Income Tax -- No Kott Milic -- Anthur Lander San Francisco. Calif

Bione Age -- Stage one -- Michael Joschahl, Aurora: Minn

Ronald Resigan -- An old ager ran -- Jon Weits Houston The, and Ken Genr, Demas Fis

Marcello Mastrolante -- 11 star on Roma cinema

Fechard Naon-- Nix on Richard -- Paler Excepto Pochester NY

Television Set... The one Let s sit

Sir Isaao Newton- I waan ta 'Sir once - Jato F Hit Knawelle Tenn Henry Cavendeh -- Canny Httl devicer -- Henry D. Schmafter / cavetton 1/

Radioactive Wastes — Avoid team act wite<sup>1</sup> — Julie Cohen, Upper Montoler NJ

-- Jore Cores, Obber working, wa

That's One Small Step for a Man -- NASA tramples the moon faits -- / are Back J postery. Obs.

NoIA - Alen - Serar Bataant Wexland Mass

Watergate -- We get a rat -- Lauren H. Smith II. Phylophysic Pr

Tennessee Williams - I sell swist an Ameri

- Darothy Sriviti Mains Fla

Mona Laa -- Amanis of -- Paula Boohrophic Sotantion Pr

Nexander Craham Bal -- Ma Boli rang Alter beaut

Scarborough Onl, Cenede

Steve Martin -- I m near TV set -- Bran Kosloska, East Borre, NY

Hypochondriacis Useful Alment -- No oures Doc -- my hosith is painful --- Denove Webster Visitoris Surg M Dr Isaap Asmov - I skold sarceren - John F Hill Knowske, 7017

Anwar Sadat -- At a cand wir -- Paula Grossman, Hagerstan Sweden

Moshe Dayan -- He s a dynamo. -- Bhi Meyer, Vastation, S D.

Homo Sapere - So s man, I hope - Mark S. Milker, Honoluly, Harway

Elves -- Lives ---Kylar Land, Rensselaer, Ind

-Mok Bazavsky Crosso P

Make Peace Not War -- Two keep man a race -- Bany Walden

Whannock B C Canada

Freudians-- Lds are fun -- Chris Hyman Munchester Mo

Harlan Ellison -- 19 A inter19 Holl no! -- Platen Wilkerss Pocatello, Maho

Omer Magazins is Gamas -- Some amscing alegneds -- Azer Gamsson Redusteds, Com DO

# Space Settlers:

# An Endangered Species?

An Istantiational regime declares the Moon osteroids and plenets off limits to space

The piet of a science dotion repies?

No it would be a consequence of a treaty the U.S.

The treaty the Agreement Generary the Accounts of Stotes on the Micon and Other Deleting

 Impose, effectively on indefinite retrationum on the commentabil development of nextonnextenil mechanisms.

- -means a monoithic Earth-controlled regime months Mone and celesizal bodes
- effectively prohibit velocidasis from example real f property
  encoded and setuplication from obtaining peli-
- --prehibit and viologis in space them becausing perboal weatern or changing responsibly --mean violaties, pretailogous and helpitate to
- open volacies, installations and helesatis to search by any Earth government or the atternational space reams

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Proof par with us tools of the hydron battle to preserve cur right to ponear epicon Send in your check for SSD SSD S101 2100, whenever you can alford, cody With your help the endices transer will remain gene for all of us

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We don't have to worry about those foks getting U.S.Soosty 1550 N. Perk

Tatton AZ 85710

TEST levent to ensure individual freedom and apportunity for everyone in specif. To help share our future, eveloped to my division of

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# EXPLOR/ATIONS

By Kathleen Stein

event nots are the oldest ecosystems on Earth. Their imprint sched the must and send 700 million years ago. By the begrining of the Devinan Reveal—when Building each offer—the coal structures of the wends save was much the same as they are note have was the the same as they are note.

Yot corall reafs are as delicana and vivinensità lo human intrusion as anytang dias on Earth. Now ai the tag end of the heriteth confury divers who visit the genal reach lise the recurring paradox of cur reach lise the recurring paradox of cur time. How can we truly leave acmetring when the act of coserving altais the thing being observed?

Some say that a well-dwad seal sature already childs way to outric bin. However that rulate being changed, in some arrest at least. Those mont venerable of an mat colorent as being protected through a growing number of new underweter being and tengenets.

On U.S. Highway 1. running though Key Largo the Fist and largest of the Flonds keys on unoblicave sign amouncies the entrinee to John Pernishamp Costi Reef. Drive Park, Vescore to the park land a motional fundam, 2:200 acress of uppand frist includes 60 composite bathocailes of intractications of a composite bathocaile out intractications pagalant as three in the park TB ropare reaction interes of intraground bathocail and state. Permissioner park TB ropare reaction interes of how good front undereasoner park a static transmission and a battage on the world if not undereasoner park a static transmission in the state of the opport for many the many as the battage of ecological interest the wards of the ecological interest the state.

Underwater bulkg parks are the letter in manual increasion areas. Boacks Permaksimp which opened in 1962, there are new at load is seven other with sparks in the United States and Catalda and two bordshing on Permakangs the other with Date Markees North Catalda. Many more shas may soon the designed as preprives in cataload dring areads.

The invention of ecuba apparatus helped pave the way for alw parks. Soubs provided a rackoal new perception of the sea and 62 inhibitiants. The discovery perallets the tale-mentants contary. recognition that followstone. Yosensio and other unque natural stellar have a special beauty that is all too tagle. Many such avails now are both potential from people and open to that. Undarwater parks are entension of this interest in pressiving natural worderlands.

Prevention of the second secon

In 1989 control of the ocean thor to the them mile limit was logingd over to the Pionoli Board of Parks and Historo Minumanta's the avaia beyond seen to the National Marine Sanchatass in 1960. The involutions was nathed in honor of Marin Heald' addro John Pionekamp a origitme changes of door services the paid Today Pionesamps in form as free him 50 apecies of cost and 360 species of aquato. If

The Detebban Bost an ideal location to ulwapies and here are less in the U S Wight Blanch: a secretar's twar at Bucklished, of St Cleax and proher or Turner Bay St. John Both also are ownized, buckmany lets of which dense a park wadars around St. John are spontaneously wadars around St. John are spontaneously wadars around St. John are spontaneously used start with denses and thy complex of schild methods are start when years of the accessing the sources



Coral roots where housing projects and welfare systems for a pictors of manne site

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Maho Bay Camps and explore the myradi lappons and bays that support the raids fricano life island

To cools device the vesicle of the Regis Van Deverret Reverse (and the Regis Van Deverret Reverse) produces of the neurosci Reverse Re

For the basic can's display though, thy Promolesaics amoning crosslar tipe to Gercan Popole. It was shown the day Lawel occurs the values was off-dener making by local standards Built for me Lwas an other near unweek Bystand cut a signature wirre huge stands of allerom palice term and savage ter coard Armenia bioaned ine posts and plants seemed to creat around like parmals.

A word of warning Roef tever is endemic to real dwing Below long you will develop an instituble curosity you'll need to know everything about comi

The sector file of the copy Cost rest is or the house projects and within the tors for manner the. Then the sector support a larger carbier of plats and annal secosis than any other infrangement such as 0, other or thereare rest such as contain they sponger, see a remotes thereases motivate existence and a platshas of hole. All the topical bereat social such distribution register and barrolistin version groups and barrolistin version groups and barrolistin version.

Roots are sand factories. Fut munching on occut generate an estimated 2.5 lons of land per acte areary year chasting a heathy environment for the incounds of topolose that cannot he without a sandy seated and humans who crime white becomes on which to pushe themselves

The solution and the second se

A task tables and so obes coul A subset coals existent tools could be and more consception crustisaniliar information of the mouth Coals não poson. The testacles of many polyps are disapped with campilication polyps and shooting devices. These special stargit colls collect interactions is copil tightly vicind measles that peneticate 20. the prey's body and paralyze I with lotning

Accessisationaly has only one opening The closed end forms the base of the polyp Each individual polyp accesses lines (call ourn calcones) which basids up slow able story of cap shaped exoskeleton. Over millentus the minutase grow reto cosis close hundwide of kilometers (one.

Coalo purso oul an amicing lon prime of time per repairs minist of polypositical a day. This negative strength of the polypositical near three times that out a ministrative polyposition of the polypositic strength of the society coals need continuously moing water that is well it and inch in oxygen and nativesti

Polyp love Coal can proceage asseally by cell dearen and await's by failout ofmake and learning gem lines. A few coals are hermspiredric: Eggs mis be intillated within or without the tody and alter habiing, the larvae are learnsported over long distances by waves and currents. Once they find a solitable support – uscally

 Spread out in aquavision were huge stands of eikhorn, pillar, brain, and savage fire
coral. Animals bloomed like plants, and plants seemed to crawl aniurd like animats 9

another reaf or a wrock—they after itemselves and measmorphous into oxiges. A levery seel is bisscally a venice proving in lever millimeters per year alog a complex topography of supermipoted skeldeds the desired shells with bohind by generations of large master builden.

Redstorm right palaudes, set-repaining braakwaters that shalter land against storms The costs pronus structive and mesowe interwatering of buffesses and channes disspace wave change and sitew the lines of sediment that would otherwise sufficiale it

The Florida Kay roefs existing preconously at the northermost edge of their climatic arrays are subject to Sirobist the beyond those that affact. Cataboan reels. Surviving househad of years, they have built and shaped the Florida perimitula. If hey die much of the Surshine State could be rave/i away.

The west treat to reels is human intervenion. Dures musilean that bening all atsinch alleha? Such alemning magnicart damage as abiasion invites invation by deadly forms of aligne. Some intections bened at invited by reach alteroon to the coral's taske until only a white skeleton remains. The water is poliuted or fills tight is obscured, the possibles

The inhabitants of the real are as intercependent as the citoms of a city When cores diese manne like must migrate or starve. Dead coral structures like abandaned buildings, decay into rubble, inlemed by conserties and abare.

These should be a say all above the ontimeses to all use genes is an user with rule. It is noted but sense when explaining submitmes Darks speeches a more procession. Darks to present the same is a stranger of the same in the same scalar gard of the same in the same is a first sense of the same interval to the same or needs to stand on cost. Darks with separneeds the same scalar light to needs that have had a channel to rescale from the same states. Dark have a strain follow. Act redestration has well as the most states and the same strain follow.

### IN TRANSI

Pennekamp Coral Real State Park, Kay Largo Florida Open al year Visibility 10 to 100 keet

Buck Island U/W Park St. Crox U.S. Vrgin Islands. Features a snorkolers trail Visibility 100 feet plus

Edministe GPW Park on Puget Bound Edministe Washington A sunkon drydock and wescked tugboat have become the seedbed for a not variety of marine life Vebblicy 5 to 100 feet

Phote Cobox State Reserve: Carnet California An occiogical protono Pont Lakos has been called the greet en meeting cilland and water on Earth. Dwingto fai oppularity however into Juddy toarts are allowed to dive all one time. Get there early Weathilty 20 to 60 teat

San Dego - La Joha (J'W Park La Joha Californa Also very populie il festures ai tody budina with sandshife lodges and abundant ses life. Thely yands out is La Joha Submanne Carryon which should be esserved for expenenced divers. Visibility Sito 60-lent

Catalyna GriW Park Calano Point Santa Catalyna Island California: A protected area monitoring kelp and abalone growth Visibility 40 to 80 feet

Five Fathorn Park, near Georgian Boy Driano Conada: A merce for wrock dwere Frenze storms have claimed numernet verseries there. Violative 10 to 60 teel

AMS Atone Salt Cay British Wigh Islands Washing 100 fast plus

There are all lead two other underwater parks in the works Juak Plath-Burks State Park at Nonkery California and Palos Wrote new: Los Angeles And the Unied States has desgrated two other Mome Sanctasas: the one at Ponrelisate gain of the Monter Mome Sanctaany of Cape Hattmass the location of the works of the Onli Maritonciad Its remains are passive at 1923, and regulators concerning the site as stringer since site concerning the site as stringers and a SOLAR MAX

# STARS

By Mark R Chartrand III

Called the Sofar Maximum Maximum Maximum (SMM) this inversisable sociocatitis that variguant of a now species of modular with new communications links to bank Actually costing lease than new engines bulgptimetox and sense that was more than bulgptimetox and was even you was more than to the fill in both to a new understanding of bank harmase then

The SMM is designed with two men purposes, to study the three dimensional dobtile of the indeet revents called solar fares and to measure with eatherne acountry the foot crising output of the stat we depend on for can twee.

In the post the years acress encourses that begins to the equation is adout the these begins to these post on a solution methody aims to basis assoch and commany statics basis assoch and commany statics basis and aim theme participe neutrino is two based and the post based of the participation of the solution encounted with the participation of the operation of the participation of the participation of the based operation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the operation of the participation of the participation of the participation of the operation of the participation of the participation of the participation of the operation of the participation of the participation of the partis of the operation of the participation of the participation of th

For reasons still unknown, the sun has a magnetic field that occasionally bunches up in incide where the regresched lines potende frequely the surface. This produces areas where the temporature is only about 4 000°C occide that the upus at surface temperature of 6,00°C. These cooler that all or only about a there are cooler that all or only about a there are the other surface. bright as the surrounding surface, and to they appear clark, almost black, by contrast. These dark areas are called averages. Some of the surrappear are considerably larger than the earth

Deep skidet frugt insupply the uncetter direction of the strengths appear, asso will only all scale proportions. The three strengths are proportional to the strength three strengths are all strengths and the 1907 and 1908 parts at the sequence of the strength and the strengths and a beam from the interfering strengths and and then the only well to advance the strength that strengths interfering strengths will be found the strength and the strength and strengths and the strength and the strength and strength an entering strength well to advance the strength and the strength and a strength and strength and a strength and a

The yoar is another peak penod, and jadging from the buildup flicks as if we will see the second generet level of schirty since the evisitience of sunspots wite decovered. And this term the absonctives we poing to be percented



Solar Max will send its data by relay satellite

Note the surgepts we was of mcreated activity including positive faces Flassis about 8 000 kilometers above the surface. are signers that subarily burit facts with enormous amounts of raciation and high-energy particles. A single face can infesse the energy of to tricks findiagen branks, saming amounts with the subaries of bagress - hyber than the categor of the ant total A thing.

The measurements about the SUM vet member regress of the sum where living opported. Helsen immuse the sum and exponence. The sum and the sum of the air the Bootsend Space Display Conversion of the Information will be bootsets to consubchain Any-stand Wither I sources to the Information will be bootsets to consum controllers. Therefore, a constraints and memory and the memory of the will demonstrate with the supercent

During the year long program—it is likely to be extended — the cooxinated asseut on the receips of order activity will reveal where in the scar's atmosphere the fisnes begin how they propagate, and which — if any—of our models of the sur a microsofta directive as received.

The SMM reaches the trist saturate designed to use the motions on bus, a kind of stack balas unit that can supply power etitlude control, data handling and communications for many types of oppoor messans. It is designed to be repeated in orthel of recentary

The BMM is also designed to be removed tion orbit and brought back to Early. This site first Milliment of the space shutters promee Barring further sites in the shutters schedule, the SMM is due to be caught and sourced in Decomber 1982—by the second tight of Burlie 099, cubbed Chatterow

At a planning meeting for the mission reported in the pound Physics Today. Dr Planke wedgenity saw our cherchys to understand the universe as a sort of brive comedy. The sum, then The sead, "is our VerpL acting an guide through level after berd in as we look more closely into the inferro "

But he's not abandoning all hope of an eventual solution DO



### QUIZ 1 HOMONYMS

- 6-b Mars



AUTOLE MACHINA

## OUZ 2 HOMOPHONES



OUIZ 3 HOMOGRAPHS

- 4-e delect

- 10-a conduct



New York City for first calling the error to Smith's death and to Warren Jackson of sity in New York, for helping to put me in touch with Dr John R. Ford Thanks DO



cases progen appears to exist in the right

garages to the largest while-a part of are not merely appealing to our periornerst about a birrd and dangerous breating enough just to regret the extinction of a

Porthaps now we can understand why the

mostly a matter of scale. We manipulate entre pendraphic regions to feed ourbattle over nature, but today the failecass of so softed by global farming that we would contrast that Gala so healy provides DC

## COMMUNICATIONS

CONTINUED FROM PASE 40

there now I found is distructioning that a spelling struct in the intere of the tawn could have slipped by your researchers I am not speaking of Purses/lawned/which is not say to spell, some niskward the town even call in Pursey), but of Cice as it is nonectly spelling.

The next shocking part of the autoa. Nexes is ward shocking part of the autoa. Nexes is the shocking part of the

> Sharon Keller Fort Collina Colo

### Beet of Ormy

This is a hore of appreciation for your Best of Omri Science Pictern It has to be the most enceptible hotorin cellection and one of the best I have ever read. The choice of stones was fantastic!

Tam a regular fan of Omwi and Eneve maai an tissaal Next to the fiction and the Games pages T/ow your cartoonal

Congratulations that your fame is spreacing. May your ideas and printer sink over dry up!

> Barbra Eolt Gathrburg, Tann

Thank you for both the superbigraphics and the fetion contained in the Bisal of Orme Science Instort. Savaning the anticles that I have read in Orke was well worth bace the proce of the read

Lawrence D Germ Jr Ft Meate Mil

#### Graphics

I find your magazine quite factmating, but what really blear my mind was the cover of your May (1980) issue. That picture is beau-

> Pal3 Bruggen Groen Bay Wa

I was greatly taken by the art accompany ing "Man Like Lik (May 1980) Think frien its own sake Like (May 1980) Think frien note impatisive. There is no way the satist could have insolve that the initial scare of the story was suggested by a vignest from art was perhaps a Wile closer in finling to the source travejote from to Beach, but thats any of one half a closen of the other The paning is simply period for the story and proves that the artist really understood what he was dealing with though his interchatation was summal

David A Drake Chapel Hill, N C

Vie tead the February (telled) save at Ome from stem to rever and have sent all a check today for our own aubortgion the options never to be without the maganes again. Dire of the most stamming things in theory or Caraya the set find that set with the bossifully reproduced examples theory or Caraya the same strength of these nither options. The auto-autoset and the same strength of the set with the bossifully reproduced examples the same strength of the set of bossifully and the same strength of the same strength of the same strength set and and strength of the same set and set of the same strength of the same strength of the same strength paralitheors.

G Edward Pendray Founding Monteer American Heinplanetary Society Jamesburo, N.J.

## Control Rip off

Saying that "the sun is a second or thiso generation sise" (Space, February 1980) made the thirth velve bean victims of a grand commo swindle. They gave us a used solar system?

San Joan Meano

## Inverted

The photograph on page 39 EDonimuum May 1980] of a prubiotic synthesis wactor is inserted

The eventual search of Me in such as deallow will gove not to organisatis with their heads and backades interchanged, and i for one are no comparing meet fer another governments body. Papular admiolucian divisions and i grant Writeen Promise a concisional parion serie if a disast make mechanism and their behili.

> Alan M Schwartz Conta Mega Calif DO

#### PHOTO CREDITS

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# Can we know our past lives?

Does personality survive dentify to experiences of past lives charg to our conscionances—as the scent of a flower ingers on? There are mistakes you could world—whing you could be cirtim. Have you full atrangely unfile yourself—mon like some one eine—with different inclusfisses and perconality? Do new phrees and faces scent familier?

## FREE BOOK

Do not lad hyporthey and projudice deny yea the trady about yourself. Remissionalism is just one of the many subjects doubt with in the Rosierneein teachings. You can live more fully, materially, if you use your Comic powers and inculias, Write the Rosierneeins (not a religion) for a free copy of the book, "The Markery of Life," accurse: 220

## The ROSICRUCIANS

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Please and as a complementer may of the book "THE NAMPERY OF LIPS."
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# PHENOMENA

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Mazes, match-'em-ups



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manual MACHINE Follow the Indubies

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favorite annocable of Dick Gregory's, and , Platory (Person 1967) in Plato T

Del Drew get proper medical attention?

Did Drew get a transfusion? "It wasn't

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- y Word 4 Serene

How did tauch a myth get started? Ford blarnes poor reporting by the minority pross of the Friters but he is baing too wind. Someone mode the sloay up probably for political purposes. The locate



STEEL MAZE Crawl horn arrow to arrow violde the steel tubes. Don t for the Million fool your

and the climate of the times made the tall plassible, and people warned to believe in another homble example of where people inhumanity

Concost an airmain termine team team team ministree death of black black sources Braare Erreh alters a Massagen sub occordin in 1957. Is weakly blackwat here who black to death outsteere when hospath whole has all black team black way. (So Bassis) up Orthin Albertains Them and Dair Net of the team of the source and the source Bassis). Up Orthin Albertains Them and Dair Net (March Albertains Them and Dair Net (March Albertains Them and Dair Bassis). Dair Albertains Them and Dair Bassis blackfords and sourced at the source and the provided the source of the source and to blackfords contend on the

History Nepoleon reputedly sold, to a fable agreed upon." We hope that in setting this record straight, the fable of Charlins Drevis cleath will threatly be put to root but we are not optimized. Journalistic worn toackly attaintion a wedery crossrationanced taile that "should be true. for the tailer of a most moral leason. For our part, we are pleased to help remove the 30 year sitigan that has impartly followed the doctors at that Burington. North Carahina, Acoptal

### DEG HANT

The four method was accesses to the opposing inpug and in the basis of an well in the second secon

### COMPETITION #14 DOUBLE DACTYLS

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Black holes to limencks Incontroverably Utwok that he s written Still not erough

If there is any ityme form as addictive as the limencie if is the double docty? As Sofnad by Atthray Hechtland John follander in their book Jaggory Pokery A Campiendum of Qouble Dactyte Athere unit the form host these characLetters (1) an explaine point which the fact and explaines point which the fact and explaines the set of the fact and explaines the set of the

All entries become the property of Oray Nane wai be indicated. Driver must be portmarked by August 15 1600. Biogenetics 11 for portmarks outside the United Blacks. The first-preve writer will mostle \$100. Punners up (2110)up) 10 will auth serves \$255. Sends to Oray. Computation #14. 900 Thed Avenue, New York, WY 10022 DD



PINBALL. Walk from proball to pyrtratil Xos are stopped where the blue errors fouch



# LAST WORD

By Larry Niven

The concept of money burning a hole in your pocket would take on new meaning 9 It happened around the time of World West 1 The director of seesanth for Standard Oil was sold, "There is all this goal wit over when warahine oil. If atomble shift if hur no the landscape, and covering this hard only gets the drit goalsy Find something to do with it."

So he created the plastics industry He turned userses, offensive goo into

The Dimited Laterature, or benefative upon the over Dimiter the term Laterature (Dimiterature gaps, umfl water is earlied to Uchrossie machinery and Later to belif Consider acres of the homes substances that go into committee must come sub-off a seck while has differed any point of a seck while has a seck while has a seck of a seck of a seck while has a seck of a s

Now plans for the disposal of expended nuclear fuel involve such idrategras as

 Payro gi retro dal' allocatamente di vesiti replicatamente dei initiari di capiti to basadari, alco al apico di tabadi francisi to basadari, alco al apico di tabadi francisio memory, ina basenza di vesita life y una la traspecto di vesita life y una tabati payro allocata picatamento di vesita deserti topo allocata picatamento di tabati deserti topo allocata picatamento di tabati deserti topo allocata picatamento di cali di cali deserti topo allocata picatamento di cali di cali deserti topo allocata picatamento di cali di cali deserti topo allocata picata di cali di cali di cali deserti topo allocata picata di cali di cali di cali deserti topo allocata picata di cali di cali di cali deserti topo allocata picata di cali di cali di cali deserti topo allocata picata di cali di cali di cali deserti topo allocata picata di cali di cali deserti topo allocata di cali di cali di cali di cali deserti topo allocata di cali di cali di cali di cali deserti topo allocata di cali di cali di cali di cali deserti topo allocata di cali di cali di cali di cali deserti topo allocata di cali di cali di cali di cali deserti topo allocata di cali di

Granted, there will be propile withing to anose the force. Thirtie of tais evolution in action. Average human intelligence goes up by a fraction of the percent. Using the racioscitive wastes, stored in carsisters motifies basiled takin where the commercial publics are also juritide only another. The racioscitives would go back into the magnets from which they active

Each of these solutions gets not of the shall but at some expense and no profit What the world needs now is another genus. We need a way to turn rachosolive wantee into wealth.

And I believe I know the way

Make costs out of th

Redicective money has perfam dividual advantages

A healthy economy depends on money circulating feat. Make it natioactive and it will restantly crouidate

Vertying the genuineness of money would become wave design counters, like pocket calculations before them would become both may and charge because of makes production. You would hear them rapid clicking at every tricket window A particle accessivability in too sequentiave to be practical for a counterfielter, counterfelang would become a lost art

The eccentry would be boosted in a matter of ways land would become externed y valuate Even the collector abases in a church would have to be made of load (or gold). Bank washt would have to be spearased by dampers. Bytes of to be spearased by dampers. Bytes of church would have be there are to be spearased by dampers. Bytes of to be spearased by dampers. Bytes of beck there are between the would need to be therefaeld in least. Each sp. In accessibility more by burning a toba

Gold might still be the mark of wealth Gold blocks radiation as easily selence if would be used to stread the wealthy from their more

The profession is the calestor would every if now would show the Data of the Data of the Data show the Data and the Data of the Data show the Data show the Data of the Data show the Data show the Data is not need to the Data show the Data is no

Foreign and to Think World countries could be delivered by ICBM

Is the part another dhay ubgean externer 0-could he American people be brought to accept the nationalexe admatch an innorm? Farthage we could its got to be better mark watching geren apport appropriate admatch the discussion to which used to be 1.5 cents is meng inseanable watch? If the occuld count on its appopriatee - will it costs the same to print a twenty?

All least the redisactore money would have interruption where the investment calling nuclear write our discondurts may well rotor to shad it is drainghous proceed because funderpoint least because is drained point. The drain of the because is drained point. The drain of the isotopic set of the the point of the drain of the nucleasthe than the or provid money and any mark of the set of the set of the set organity obtained.

Dropping racioactives into the sea is wateful. We can ensure that they will still be pround when the earth's of and cost and pluonium have been used up, by unaso them into money new **50**