May/June 2001

COUNTDOWN

Volume 13 Issue 3 The Official Newsletter of Southern Pennsylvania Area Association of Rocketry

We flew, We Fly and We will Fly some more!

ECRM-28

May 21 2001

A real quick, cheap-and-dirty ECRM report:

Glenn Feveryear and Tom Ha helped out with range duty [Glenn tracked on Saturday, Tom timed on Sunday]

Rick Hackman flew some support models on both days

The Over Forty Victims Of Fate Team had 'gator tail with dinner Saturday night, found out that yes, Motel 6 REALLY does "leave the light on for ya", and qualified in each event except for 1/4A Flex Wing. But that's no loss, since as many of you know, I personally believe that flex-wing is the evil creation of the anti-Christ, and 1/4A engines [or "1/4A mini mot@#$ %$#*ers" as my partner calls them] are good for use as fish food.

More in the next newsletter.

Film at 11.

SPAAR Sport Launch

May 27 2001

We had a nice day launching but when the rain came everyone left except for Dale Jacobs, Ed Miller and I. It wasn't long until it cleared off and we set up a pad. Here are our launches until a thunderstorm rolled in and ended it.

(John & George prepping a rcoket for a compitition flight)

Dale left while it was storming but Ed and I stayed. When it cleared off again there was this nice 15' long puddle behind us on the baseball diamond. Well what do you do when you still want to burn a rocket motor and all is wet?

Do what did. I got out my XR-107 (RB-1 or Rocket Boat #1). That's right a rocket propelled boat! I pushed a 1/4A 3-3t in and it refused to be lit. I tried again and again no go. Finally I decided to try an A3-4t. I figured since water is much denser then air I would need plenty of motor to make the boat move several feet, so a puddle approximately 15' long would be plenty of room. Ed lit the motor and I shot a photo as the boat shot off on a straight course across the puddle. Well unfortunately I was incorrect with the idea that the water being denser then air would produce more drag and thereby give me only a few feet of run. Instead I ran out of puddle way before I ran out of motor and the boat hit the ground went airborne and crashed. All in all I was very surprised that the boat without a rudder traveled straight across the puddle and also

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COUNTDOWN

Volume 13, Issue 3
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President
Dale Greene
(NARAM or Bust)

Vice President
Tony Rossi
(Let's see, the html code is up-linked to the live video feed and)

Secretary-Treasurer
Larry Geroach
(Having a nice trip on SPAAR)

Section Advisor
Glenn Feaveryear
(If I could just get that 55" parachute in that BT-5)

Member at Large
Dave O'neal
(If I could just get that 56" parachute in that BT-5)

Newsletter Editor
Mark Kamide
(Thank you Comrades for your help with another issue)

CONTDOWN is the newsletter of S.P.A.A.R., the Southern Pennsylvania Area Association of Rocketry, NAR Section #503. COUNTDOWN is published 6 times a year for the benefit of S.P.A.A.R. club members. Any information contained in COUNTDOWN may be used as long as proper credit is given.

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The Editor's Corner

Well here we are again, half way through the new year and we flown many events, ignited many rocket motor's and with a combined altitude of all the flights reaching to the upper atmosphere things going real good for us.

We do need to start making plans for the remaining portion of the year, elections are coming up, next years flight schedule and of course our winter build projects are being discussed. It's over 90 degree's outside right now and the thought of winter build projects seams an interesting cold thought. We have just three more issues of the Countdown to publish. Since the Countdown is the premier supplier of Rocketry and space information, stay tuned to the propaganda machine.

Anyway, if you have any suggestions for next years events, or where we should take our January SPAAR trip please feel free to let an officer know and we will be sure to make the masses aware.

Mark
mkamide@prolog.net

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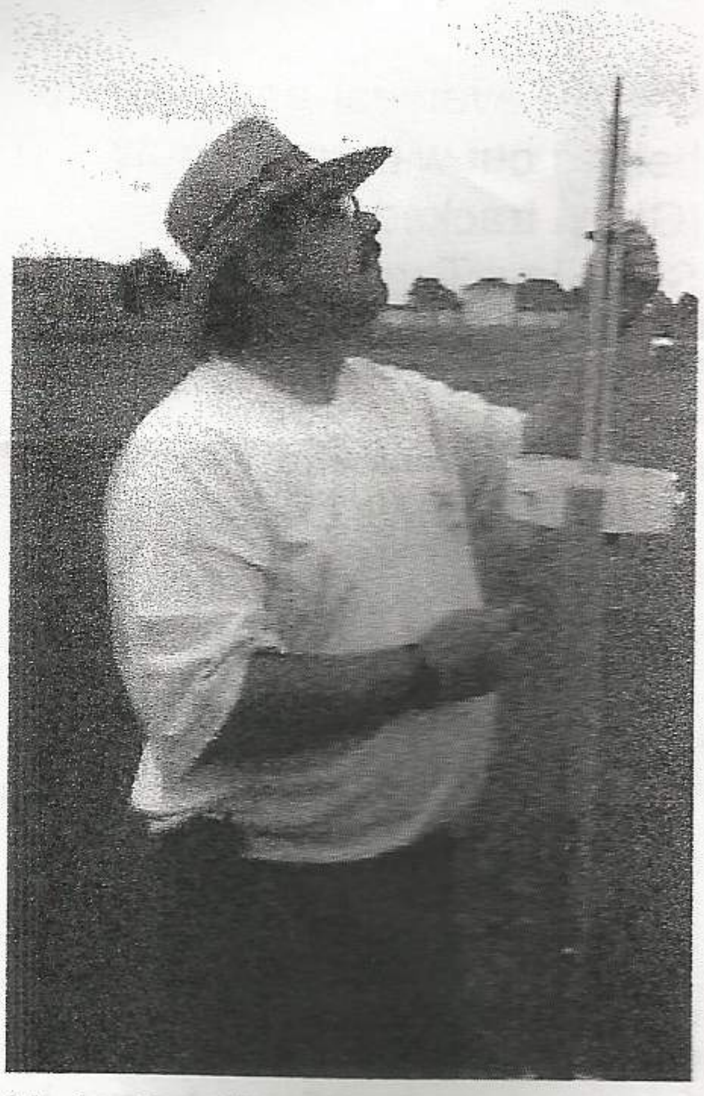
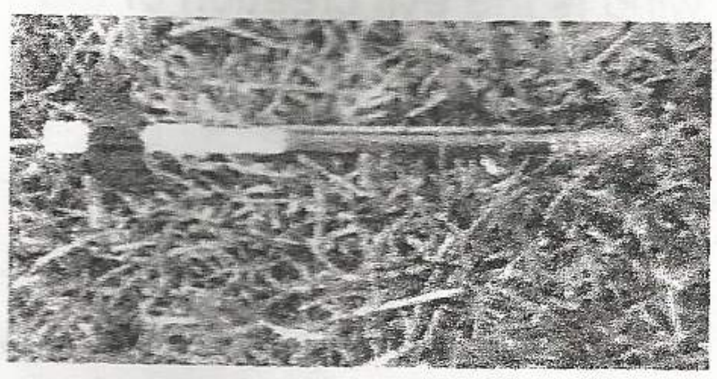
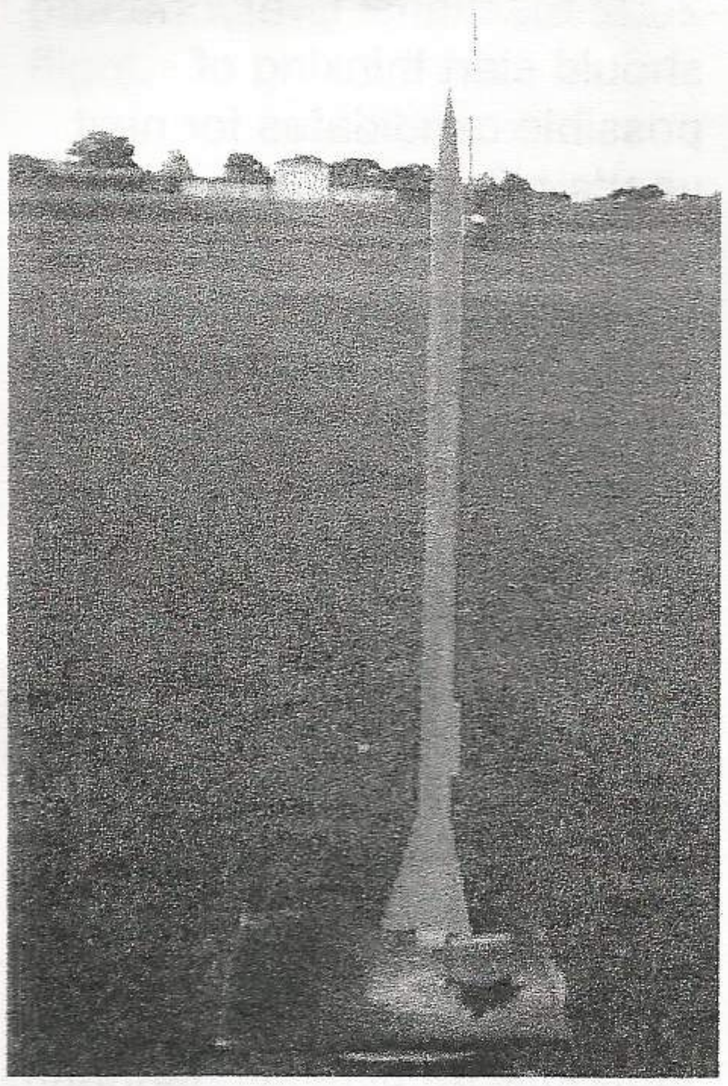
stayed in the water. I need a place where the water is smooth and not too deep to wade in. (I can't swim) If anyone has any suggestions for an area about 30-40' long please let me know.
Having only run the boat one time I can't say that it will always be stable. All in all those of you who went home early missed out on something different.



(John loading the rocket into a rail launcher)



(John and Georges rocket after the flight, weak ejection charge did not deploy the streamer)



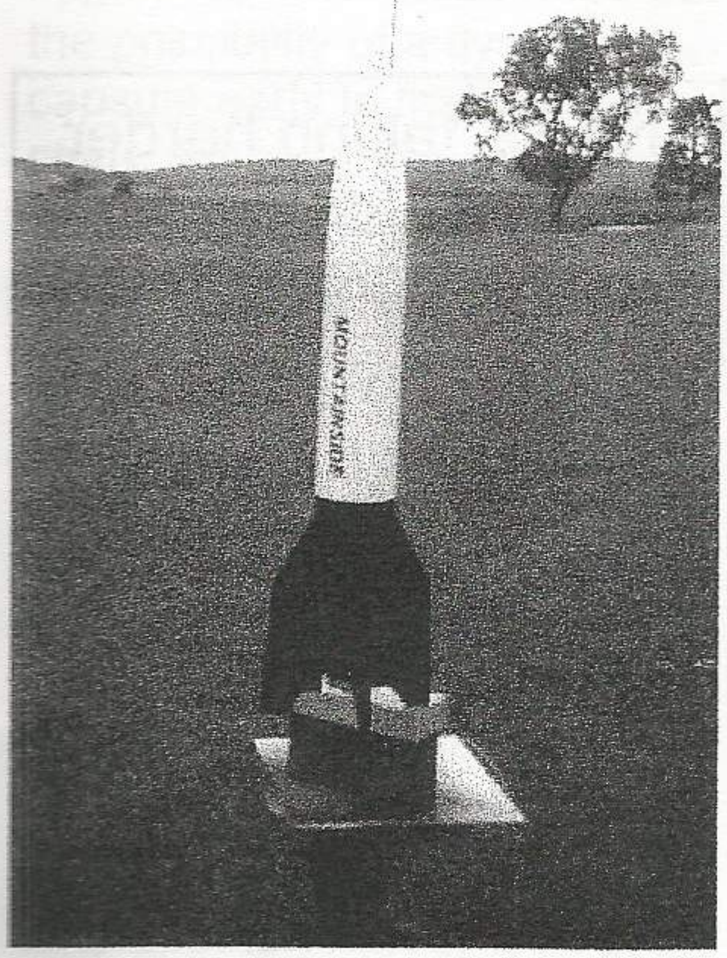
(I think this is Erics Corporal)

Partial flight log of May 27th launch

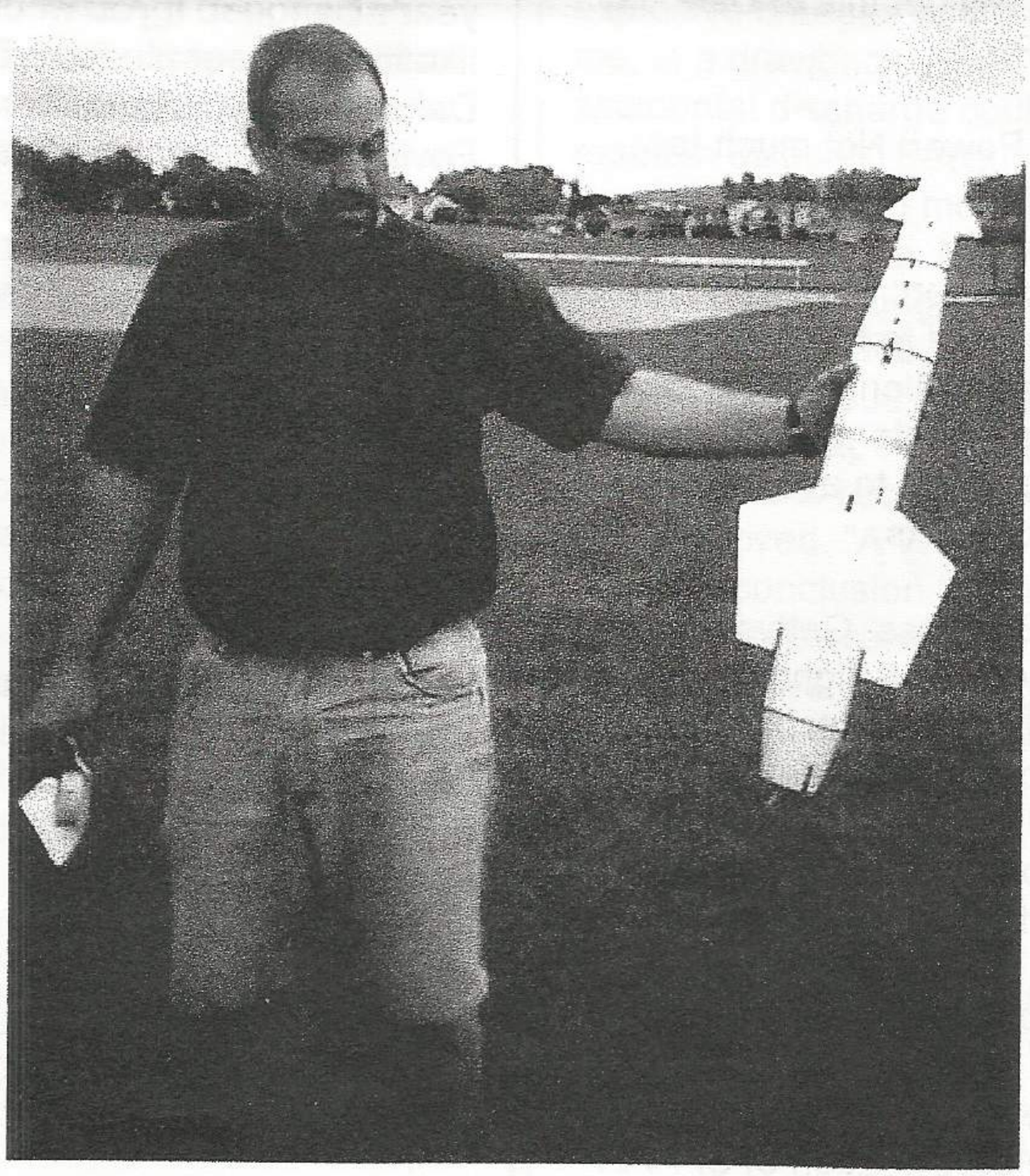
Ed Miller	Armacron 3	scratch	3 B8-5	Estes	GF
Rick Hackman	Sky Bird 2	scratch-Jim Z	A8-3	Estes	GF
Dale Jacobs	Twister	Custom	A8-3?	Estes	GF
Rick Hackman	Cloud Buster	scratch-Jim Z	1/2A6-2	Estes	GF
Ed Miller	Armacron 3	scratch	3 C6-7	Estes	GF

(Ed Miller flying Estes motors???!!!!)

(A Launch Pad Rocket proudly being displayed prior to a successful flight. Although I think it did land on the school roof, ouch)



(A Mountainside Hobbies V-2)



Meeting Minutes

June 22 2001

Hello SPAARs,

In case you weren't able to make the June meeting last Friday, here are the minutes:

Attendees: Mark Kamide, John Yost, Gregg Martel, Tom Ha, Rick Hackman, Glenn and Rita Feveryear, Tony Rossi (If I missed someone, let me know)

Treasurer Report: No Report

Section: NAR Section of the Year questionnaire needs to be filled out and mailed in. Tony will get this to Dale ASAP...

High Power: Not much to report...

Competition: RAMTEC results are posted to the SPAAR Website. Glenn will try to request a later date for next year's event to avoid Father's Day conflicts.

Old Business: Gettysburg Launch - 115 flights, Good weather, the Hutchinsons setup a nice display for visitors, ranger asked about competitions, club decided to hold this launch again next year. Club also discussed other possible events at G-Burg Site. Bad timing (too close to RAMTEC) prevents more participation of SPAAR members.

New Business:
Much discussion on a second set of launch equipment. It was decided to scavenge old heads and stakes to build about 6 pads. John Yost volunteered to get an estimate of cost to build a 6-pad controller capable of drag races. This equipment could be used for "other" type launches (G-Burg, competitions, etc), when there are scheduling conflicts or when no one is available to deliver equipment to a launch.

Banquet: The club will need someone to coordinate next year's banquet. If you would like to volunteer please let Dale know. Thanks to Rita Feveryear for doing such a great job in year's past!

2002 SPAAR Schedule: Rita will start working on the 2002 schedule. If you have a date that will possibly conflict with an event, please forward to Rita Feveryear.

Winter Build Project: If you have a suggestion, please send a message to the e-groups list for discussion or let Dale know. One suggestion was given so far: choose one rocket to scratch build from the Estes 1981 catalog, pages 32-33.

2002 Elections: Everyone should start thinking of possible candidates for next year's officers.

Winter Trip: If anyone has a suggestion for a winter trip, please send an email to the group or bring to next meeting for discussion.

Well, that's about it! If I missed something, please let me know. Hopefully Larry will be back from his trip out West for the next meeting to give us a treasurer's report (and hopefully he didn't spend too much of SPAAR's money while out there!)... :)

Tony

NASA taking harder look at shuttle escape capsule

May 21, 2001

After a full year studying a variety of escape systems for the space shuttle, NASA is taking a harder look at what was considered the long shot: a flyaway capsule.

The idea would be to install ejection seats in the cockpit for the pilots and put a pod in the cargo bay for everyone else to sit during launch and landing, the most dangerous

phases of any space shuttle flight.

In the event of an accident, the commander and co-pilot would eject from the shuttle in military fighter fashion. The three to five other astronauts would escape inside a pod that blasts out of the cargo bay and parachutes to Earth. This is a long way from being recommended, let alone approved and, like other escape options under consideration, may remain on the drawing board forever. It would be expensive -- hundreds of millions of dollars, possibly $1 billion or more -- and take each of the four space shuttles out of action for retrofitting for a minimum 11/2 years. Johnson Space Center engineers in Houston ruled out the possibility of a flyaway capsule early in their $5 million study, the most expensive and extensive analysis of shuttle escape systems ever conducted by NASA. They were put off by the technical challenges and the intrusion into the cargo bay.

When the engineers presented their findings in April, with the focus on ejection seats, shuttle program manager Ron Dittemore told the group to take another, harder look at an escape capsule. They will report back to Dittemore in July. The Mercury and Apollo spacecraft had rocket-powered towers to fling the capsules away in an emergency, and the Gemini capsules had ejection seats. NASA took back its claim of an "operational" space shuttle fleet after Challenger disintegrated 50,000 feet up. Ejection seats could get astronauts out of a doomed shuttle from an altitude of 70,000 feet, maybe even 100,000 feet or more, McHenry says. A pressurized escape pod could descend safely from an altitude of more than 200,000 feet. Those are the benefits. But there are disadvantages, besides cost. For starters, NASA's astronauts are not thrilled with the idea of splitting a crew for launch and landing, or providing different escape capabilities for different crew members. What's more, bulky ejection seats would take up precious space in the cramped crew cabin. To install seven ejection seats would severely limit the astronauts' ability to work in orbit, McHenry says. McHenry says five ejection seats could be better accommodated. But reducing a shuttle crew from seven to five would hardly be popular in NASA's 155-member astronaut corps. And it still would force NASA to cut payload weight by several thousand pounds.

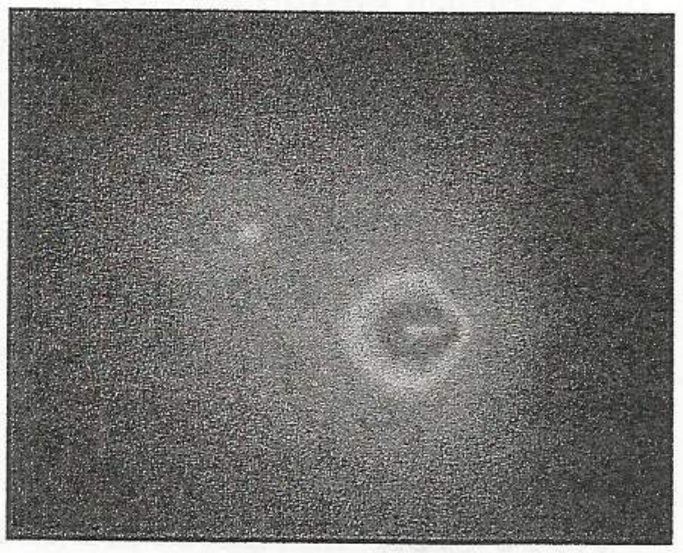
A pressurized escape pod -- considered by NASA as long ago as the 1970s -- also would reduce payload weight. It would be a complex craft, requiring life-support systems, and probably would not help in a launch pad accident. "You've put an escape system on that has to be its own spacecraft," explains Kevin Templin, a project manager in the shuttle engineering office. Making the crew cabin separable from the rest of the space shuttle would preserve the interior of the cockpit. But it, too, is a heavy option. "It has the biggest impact on the vehicle because we'd have to modify the wings," McHenry says. "Right now, the vehicle couldn't fly with that kind of mass up front." All of these escape systems would require explosive charges and that, too, is a drawback. An accidental discharge could result in disaster. Because of the time needed to modify each space shuttle, NASA would prefer waiting until the international space station is completed in 2006 before adding an escape system -- if, indeed, one is recommended and approved. "A very possible conclusion is that with the cost involved," McHenry says, "there may be other ways we can improve crew safety that would be better spent."

Crumbling comet makes for cosmic deja vu

May 21, 2001

A comet making perhaps a debut run toward the sun has conducted itself much like a sibling ice chunk last year. It is splitting apart as it swoops into the sweaty interior of the solar system.

In July, Comet LINEAR disintegrated into more than a dozen pieces in spectacular fashion before the watchful eye of countless Earth telescopes. Now a second comet designated LINEAR has joined in the act. Little more than a month ago it split in half and last week one of those pieces divided again, European Southern Observatory scientists said. The three main nuclei, less than 62 million miles (100 million km) from Earth, can be seen with the unaided eye in the Southern Hemisphere, appearing as a faint object in the southern constellation of Lepus, the Hare. The comet became visible roughly six months ago when its dirty exterior first split open to reveal its fresh interior. Exposed to sunlight, the freed material hastened the evaporative process, released more matter and reflected more sunlight, making the comet appear much brighter, the ESO scientists said.

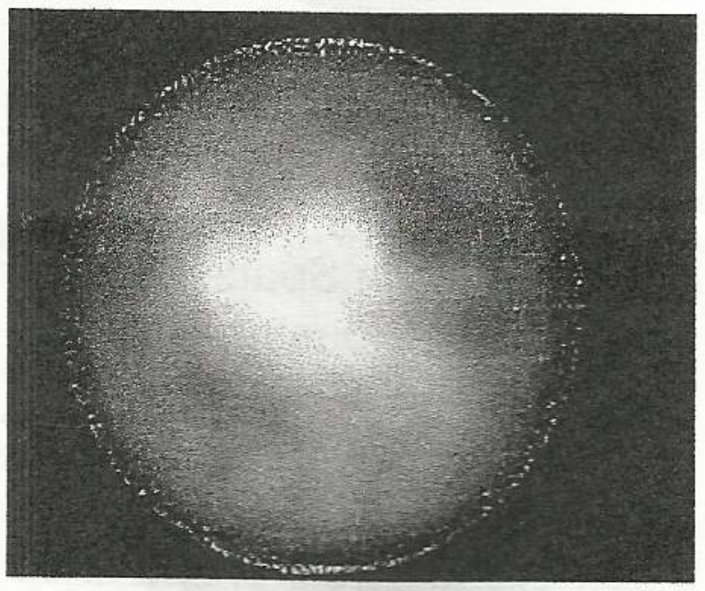


Designated C/2001 A2, the second LINEAR has a highly elongated orbit, suggesting it is making its first trip to the inner solar system from the Oort Cloud, a reservoir of primordial ice balls on the outskirts of the solar system. It could contain pristine material that dates back to the formation of the solar system 4.5 billion years ago, making it of particular interest to astronomers. The comet will make its nearest approach to the sun this week, coming to within 72 million miles (116 million km) on May 25, said ESO astronomers. Last week, astronomers published a detailed post-mortem report in the journal Science about the first LINEAR, classified as C/1999 S4. The comets were first detected by the Lincoln Near Earth Asteroid Research (LINEAR) project.

Scientists peer under Titan's thick fog

May 18, 2001

Taking a peek under the thick orange haze that enshrouds Titan, astronomers found a second, mysterious bright spot on the planet-sized moon. Space and ground telescopes had earlier detected a large, vivid feature on the surface of the moon, which scientists speculated was a massive continent in an ocean of hydrocarbons.



Advanced optical techniques have allowed astronomers to take a closer look, revealing another such peculiarity, the European Space Agency announced this week. "Another bright feature at Titan's Western limb was noticed for the first time," said Athena Coustenis, an astronomer at a Paris observatory. The contrast between the bright spot and the darker areas around it "are compatible with a combination of organic deposits and ice extents,

possibly related to topography," Coustenis added.
In other words, the finding gives a boost to the theory that Titan possesses landforms, possibly mountains, composed of frozen organic compounds.

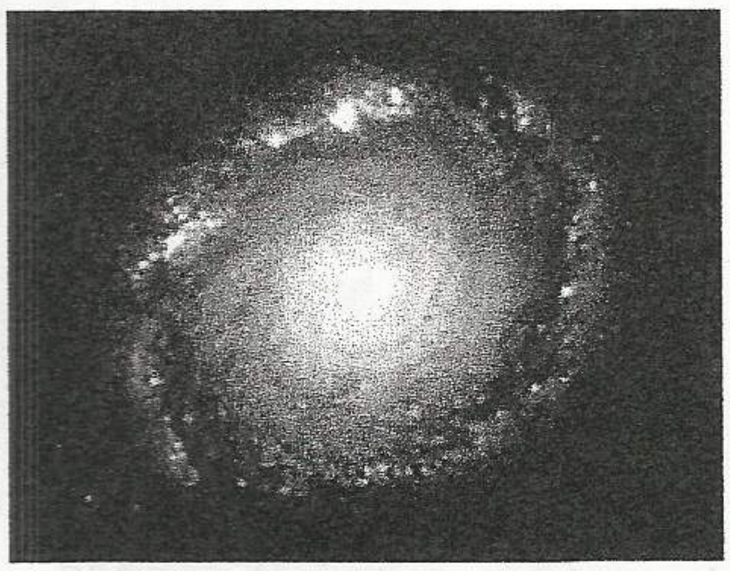
The Saturn moon, larger in diameter than Mercury and Pluto, is thought to contain a rich soup of complex organic compounds like the primordial Earth. What really lies underneath the opaque atmosphere could remain a mystery until an ESA robot craft plunges through the hydrocarbon smog in three years. The Huygens probe is hitching a ride aboard NASA's Cassini spacecraft, which should arrive in orbit around Saturn in 2004 after an almost seven-year journey. Months later, the Saturn orbiter will release Huygens, a suite of instruments packed in what resembles a large automobile hubcap, which will then parachute through the atmosphere and presumably land several hours later. During the descent, the half-ton probe will study the organic makeup of the chemical fog, take photographs and keep an eye out for lightning. Huygens was designed to withstand such electrical outbursts, which are thought to take place on the moon. Titan boasts an atmosphere, composed mostly of nitrogen and methane, ten times thicker than that on Earth. Scientists theorize that hydrocarbon rain and snow drizzle down to the surface.

The new Titan images were taken by the Canada-France-Hawaii observatory, located on top of Mauna Kea, a dormant volcano on the island of Hawaii.

Hubble spots golden galaxy

May 31, 2001

Glowing gold at its center and ringed by a purplish halo, a nearby galaxy holds a vast, stellar nursery with dusty and clean areas for newborn stars, a new Hubble Space Telescope image showed Thursday.



The new composite picture of galaxy NGC 1512 was made with light at various wavelengths, from infrared to ultraviolet, and shows a monster area -- 2,400 light-years across -- filled with clusters of infant stars. A light-year is about 6 trillion miles, the distance light travels in a year. The galaxy itself is about 30 million light-years away, relatively close by cosmic standards.

Israeli and U.S. researchers studying the image found that in NGC 1512, infant stars exist in both dusty and clean environments, NASA and the European Space Agency said in a statement. The clean clusters are readily seen in ultraviolet and visible light, appearing as bright, blue clumps in the image, while the dusty clusters are revealed only by the glow of the gas clouds in which they are hidden, as detected in red and infrared wavelengths by the Hubble cameras.

The researchers' results will be published in the June issue of the Astronomical Journal.

Young stars rock their cradle in Hubble pic

March 28, 2001

A group of stellar newcomers made a spectacular debut into

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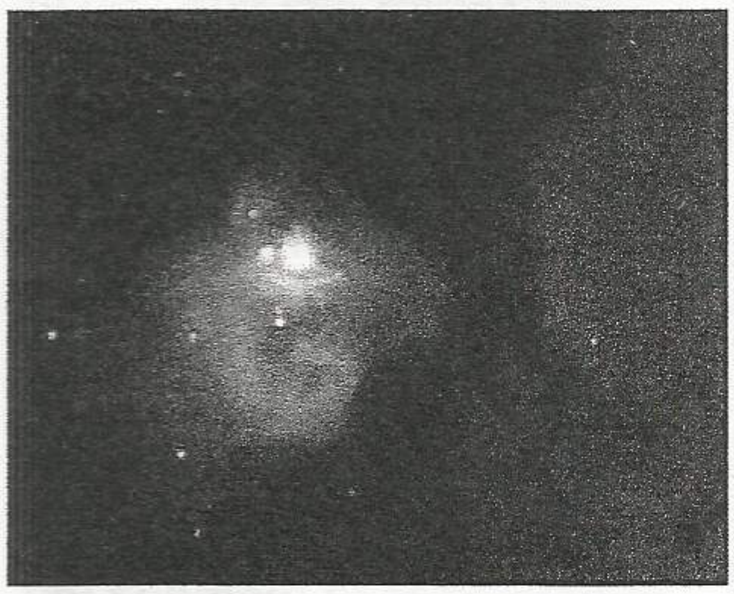
the universe, casting off their nebulous nursery veil in an astronomical blink of an eye. Blue, bright, hot and massive, the stars have blown a spherical bubble around themselves, a luminous storm seen in-depth for the first time in a newly released Hubble image. Usually difficult to observe, such large newborn stars evolve quickly and hide behind shrouds of dust and gas. But astronomers using the Hubble Space Telescope caught a glimpse of the juveniles in a nearby galaxy as they emerged from their spherical cocoon. About 25 light-years across, the bubble could have been produced in less than 30,000 years in the recent astronomical past.



The main bubble maker is not the bright spot in the upper part of the gaseous region. The seemingly gentle star in the very center of the nebula is the culprit. It actually has 30 times more mass and burns 200,000 brighter than our sun. The intense radiation and stellar winds from the star pushed out the central gas, which both formed the bubble and spurred the genesis of more stars, including ultra-massive ones in the unusually bright upper region, astronomers theorize. The hottest star resides in the luminous region, which is only about 2 light-years across. Its powerful stellar wind could have created the bright arc just below it. The bubble is located in the Large Magellanic Cloud, only 165,000 light-years from our own Milky Way. The galaxy can be seen easily with the unaided eye from the Southern Hemisphere. Blue corresponds with the hottest regions and red the coldest in the new Hubble image, which was released Wednesday.

Horsehead, not cake, marks Hubble's 11th

April 24, 2001

The Hubble Space Telescope is having a birthday, but astronomy buffs are getting the gift. To commemorate the telescope's 11th year in the sky since its launch in 1990, the Hubble was aimed at the Horsehead nebula. The nebula, a popular target for amateur astronomers, was selected by Internet voters last year as an astronomical target for the Hubble. Also known as Barnard 33, the nebula comes by its nickname honestly. Its unusual shape, resembling the head of a horse, was first discovered on a photographic plate in the late 1800s. Hubble's picture of the nebula shows a cold, dark cloud of gas and dust, silhouetted against a bright-red nebula referred to by scientists as IC 434. A bright area at the top left edge of the picture is a young star still embedded in gas and dust. Radiation from the young star is eroding its gaseous birthplace. A massive star located outside Hubble's view is sculpting the top of the Horsehead.

Horsehead lies just south of Zeta Orionis. A bright light, it's visible to the unaided eye as the left-hand star in the line of three that form Orion's Belt. The nebula is a favorite of amateur astronomers, who often use it to test their stargazing skills. It's known as one of the more difficult objects to observe visually with an amateur-sized

telescope.

Jointly managed by NASA and the European Space Agency, Hubble was launched by the shuttle Discovery on April 24, 1990. Two days later, the telescope was on its own, drifting into space, recording cosmic images.

NASA astronomers: Many asteroids have twins

May 31, 2001

Astronomers are discovering a bumper crop of binary asteroids -- space rocks locked in an orbital dance with a partner. The latest discovery was announced Wednesday, when radar images showed that asteroid 1999 KW4 is actually two objects separated by about a mile, something that had been suspected for the past year. Radar images show a small moon just one-quarter of a mile across whipping clockwise around a companion three times as large. "Some day, people will go to a binary asteroid and what an interesting sky they will see," said Steven Ostro of the National Aeronautics and Space Administration's Jet Propulsion Laboratory.

The discovery boosts to roughly 10 the number of binary asteroids imaged by radar since the spacecraft Galileo spotted the first, 243 Ida and its tiny moon Dactyl. Another seven suspected pairs haven't been confirmed. While the tally is still small, it is certain to grow as astronomers refine the techniques used to spy the miniature planetary systems. Observations of paired craters on the Earth and other bodies led astronomers to suspect that binary asteroids existed. On Earth, the craters -- all of equal age -- are too large and too far apart to have been formed by a single asteroid breaking up in the atmosphere. The odds of two asteroids hitting the Earth in the same location and at the same time are slim -- unless they were paired before impact. But the first binary asteroid was not seen until 1993, when Galileo spotted Ida and Dactyl while en route to Jupiter.

Not all asteroid moons orbit asteroids. The two moons of Mars, Phobos and Deimos, are probably asteroids captured in orbit by the planet's gravitational tug. Czech astronomer Petr Pravec said the study of near-Earth asteroids is becoming more important -- especially if scientists are going to entertain ways to defend the planet from potential asteroid impacts. "If some of them are on a collision course with the Earth in the future, it will be more difficult to divert them than if they were a single asteroid," Pravec said.

The asteroid pairs found so far share little more than diversity. Pairs like 90 Antiope are nearly twins, each 50 miles or so across. Some, like 2000 DP107, are also of about equal size, but just hundreds of feet in diameter. Others are far more lopsided, like the case of 87 Sylvia, which at 176 miles across dwarfs its moon, just 5 percent as large.

Collisions may have formed many of the binary asteroids, meaning each little moon is, literally, a chip off the old block. In other cases, passing close to Earth may have pulled off material, dumping it into a mini-orbit. In the case of 1999 KW4, the objects may be the remnants of an extinct comet. Orbital observations will allow astronomers to determine the mass, density, composition and porosity of each member of the pair.

"That tells us an awful lot about these things without having to go there," said Bill Merline, a senior research scientist at the Southwest Research Institute in Boulder, Colorado, who has discovered three binary asteroids.

Russian space forces re-born

June 1, 2001

MOSCOW, Russia (AP) -- The Russian Space Forces were officially re-born Friday as an independent section of the military -- part of President Vladimir Putin's plan to streamline and modernize the nation's armed forces.

The Space Forces were established as a separate branch in 1982, but incorporated into the Strategic Rocket Forces in 1997. They regained independence under a military reform plan drafted by Defense Minister Sergei Ivanov. Col. Gen. Anatoly Perminov, appointed to lead the Space Forces, said they became fully operational in their new status Friday, the ITAR-Tass news agency reported.

The Space Forces are in charge of space launchpads and a fleet or military satellites, which serve spy and communication purposes and track the launches of ballistic missiles. Russia has about 110 military and civilian satellites, but about 80 percent have already served their designated lifetime, and the cash-strapped government lacks money to quickly build replacements. Russian Aerospace Agency chief has described building new navigation satellites for the military is the top priority.