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SPACE TECHNOLOGY

Galileo probe returns to planet Earth

by Brian D. Marchesseault
Space Technology Writer

On December 8, 1990, NASA's Jupiter probe, *Galileo*, returned to within 600 miles of Earth. The maneuver was to gain a gravity-assisted kinetic energy boost for the spacecraft toward its mission target of Jupiter. This was the second such maneuver, as *Galileo* first swung around Venus in February 1990.

During its Earth flyby, *Galileo* became the first probe to observe Earth as done by spacefaring probes on other parts of the solar system. The craft's instruments were tested by scientists while transmitting data to Earth. Infrared snapshots taken of Australia and Antarctica, as well as upper atmospheric readings, were beamed back to Earth.

Scientists were extremely pleased with the high quality of the data produced by *Galileo*. NASA compares *Voyager* images with those expected from *Galileo* as "...like viewing a book at the base of the Empire State Building from the top story, as opposed to holding that book in your hands."

In addition to *Galileo's* unique view of the Earth, the moon also got a special glimpse from the probe. An immense basin formed by a massive meteorite's impact millions of years ago was confirmed to exist on the far side of the moon. This imaging confirms the Apollo lunar landing sightings of the 1,200 mile-wide basin.

Further data of lunar crust composition and far side region photographs were also returned.

The craft was sent off to its cruise of the solar system aboard the Space Shuttle *Atlantis* in October, 1989. After a successful launch, *Galileo* careened toward Venus for its first gravity assist on February 9, 1990. While moving past Venus, the probe made its first demonstrations of its abilities in observation of the planet.

Galileo is now enroute to a slated flyby of the asteroid Gaspra on October 29, 1991. It will then make a final return to mother Earth on December 8, 1992, passing within a mere 300 miles of the planet. This return to Earth will be the final gravity assist before the spacecraft loops directly toward Jupiter.

On its way to the red giant, *Galileo* will take a look at the asteroid Ida on August 28, 1993. The "solar cruiser" will finally come to the end of its grand tour of the solar system in December, 1995 for its 22 month mission at Jupiter.

When *Galileo* arrives at Jupiter, it will make three investigations: (1) the structure and physical dynamics of Jupiter's complex magnetosphere, (2) the chemical composition and physical state of the Jovian satellites, and (3) the chemical composition and physical state of Jupiter's atmosphere.



Round trip...

The *Galileo* spacecraft, pictured here in the cargo bay of the Space Shuttle *Atlantis* prior to its deployment, returned to Earth in December for a gravity assisted energy boost. The spacecraft will return in December 1992 for a final gravity assist before reaching Jupiter in 1995.

Astro-1 telescope takes celestial photos

by Roland Houle
Space Technology Writer

When the Space Shuttle *Columbia* lifted off the ground early last month, it carried the *Astro-1* observatory as its primary payload. The *Astro-1* was composed of four telescopes designed to explore the invisible part of the universe.

One of the telescopes, the Ultraviolet Imaging Telescope, (UIT) was used to view an photograph of the universe as seen through the ultraviolet band.

One of the targets of the UIT was the Spiral Galaxy M81 in the constellation Ursa Major, approximately 12 million light years from Earth.

According to astronomer Theodore P. Stecher, Principal Investigator, Goddard Space Flight Center, Greenbelt, Maryland, the photographs of M81 reveal regions where new stars are forming at a rapid rate.

Also photographed in ultraviolet light by the UIT

was Omega Centauri. Stecher stated that, "analyses of this and other cluster photos from the UIT are expected to add to astronomers' understanding of stellar evolution, the theory of how stars live and die."

Ground based telescopes have mostly only been able to photograph red giants and yellow stars, but the ultraviolet light allows astronomers to isolate the hotter and more usual stars.

Located in the direction of the southern constellation Centaurus, Omega Centauri contains hundreds of thousands of stars and is located within our own Milky Way galaxy about 17,000 light years away.

Another UIT photograph pictures a portion of the huge Cygnus Loop. The Loop is an array of interstellar gas clouds that have blasted by a 900,000 mile per hour shock wave from a prehistoric stellar explosion (which occurred about 200,000 years ago) known as a supernova.

This photo from the *Astro-1* mission shows the blasted clouds shining intensely in the light of carbon atoms that have each lost three of their electrons. This indicates that the temperature of the gas clouds is about 180,000 degrees Fahrenheit.

"The photographs should tell us more about the shock waves and other forces at work in interstellar space," said Stecher of the Cygnus Loop located 2,500 light years from Earth in the northern constellation of Cygnus.

The 15-inch telescope, which flew from December 2 through 11, 1990, was developed and built at Goddard.

The last shuttle mission was the first one which was dedicated to a single scientific discipline—astrophysics. However, other dedicated scientific missions are on NASA's slate for future shuttle missions.



Star light, star bright...

The *Astro-1* observatory was able to take remarkable photos in ultraviolet light, despite problems with computers. The photo on the left shows the center of the globular cluster of Omega Centauri, while the photo on the right shows a portion of the huge Cygnus Loop.



Goddard Space Flight Center photo

Security increases at NASA for fear of terrorism

by Joshua S. Mussat
Space Technology Editor

Since war has broken out in the Middle East, administrators at the National Aeronautics and Space Administration (NASA) have taken many advanced safety measures at NASA centers and facilities throughout the United States. NASA facilities are not expected to be high priority terrorist targets; however, security officials are not taking any chances.

At the Kennedy Space Center and Spaceport USA, facilities will remain open to visitors as usual. The Space Center's 250 man security force, which includes a SWAT team and

high-tech surveillance systems, is working in a state of "heightened awareness" in the wake of worldwide alert for terrorist activity. NASA has halted the "blue" bus tour through the Cape Canaveral Air Force Station for now, but the "red" bus tour of the NASA installation, including shuttle launch pads, will continue to operate for the time being.

A 1986 NASA study identified the space shuttles as "national assets" that must be protected from terrorists and saboteurs. The Vehicle Assembly Building, launch control center and fuel storage areas are presumed to be "attractive targets" the report said.

The Langley Research Center in

Hampton, Virginia has also closed to the public temporarily. Langley's primary mission is basic research in aeronautics and space technology. Major research fields include aerodynamics, materials, structures, flight controls, information systems, acoustics, aerelasticity, atmospheric sciences and nondestructive evaluations.

The Persian Gulf war prompted officials at the Johnson Space Center (JSC) to take the unprecedented action of closing parts of the center to tourists.

Under new security rules temporarily in force, visitors will be restricted to the Visitor Center, which is

a museum and exhibit hall, a cafeteria nearby and an outdoor exhibit of rocketry known as Rocket Park.

Buildings that now are closed to the public include structures that contain mockups of the space shuttle and proposed space station, a building that houses and displays moon rocks and the Mission Control Center.

"This is the first time we ever have closed due to a war of hostilities or terrorist possibilities," JSC spokesman Kelly Humphries said. "We have closed for visiting heads of state, for technical reasons or for weather and we frequently have closed Mission Control for missions. But this is the first time for this reason."



Mission control view...

Due to the war in the Persian Gulf, NASA has taken unprecedented actions to secure NASA facilities around the country from possible terrorists attacks. This is the case at the Johnson Space Center in Houston, Texas, where visitors will not be able to view mission control center, shown above, until further notice.



NASA photo

In memorial...

Monday, January 28 marked the fifth anniversary of the Space Shuttle *Challenger* disaster. Crew members from STS 51-L were from left sitting Michael Smith, Dick Scobee and Ronald McNair. Standing from left are Ellison Onizuka, Christa McAuliffe, Gregory Jarvis and Judith Resnik.

NASA considers use of robotics in shuttle processing facilities



NASA photo

Laying down the tile...

Tile technicians put the finishing touches on the thermal blanket of the orbiter *Columbia*. In the future, this work may be done by robots.

by Vilma E. Molina
Space Technology Writer

After each shuttle flight, the shuttle orbiters are prepared for their next flight at the Kennedy Space Center in the Orbiter Processing Facility (OPF). A large number of inspections and repair personnel spend weeks checking the gaps between adjacent tiles, as well as replacing lost or damaged tiles. Checking the tiles on each orbiter requires more than 180 people working full time.

With this tedious work after each flight, NASA has assigned the Robotics Institute of Carnegie Mellon University in Pittsburgh to study the automatization of shuttle processing. The research includes improvement of post-flight checking of space shuttles and the inspection of the thermal protection systems, the tiles that cover the shuttle during the re-entry into the Earth's atmosphere.

The study of the use of robotics in shuttle processing started in May 1990 and lasted to October 1990. Investigators from NASA Langley Research Center, the Kennedy Space Center, Boeing Aerospace Operations and SRI International participated in the study.

The study concluded that the processes of water proofing the tiles and certifying them for another mission could benefit from current or near-term robotics and automation technologies.

Investigators envision use of a robot on wheels with an arm and navigation and scanning sensors to work on an orbiter's 30,000 heat-shielding tiles.

The mobile base would primarily serve as an assistant to take over the tedious and arduous work of inspecting a half-acre of tiles. The sensor-laden robot could detect severe discoloration of tiles, chipped tiles and missing gap fillers and catalog dislodged tiles.

The study identified water proofing the orbiter tiles again after each flight as an early application of robotics. This process now takes many hours of time, with specially clothed workers applying a chemical known as DMES.

Using a robot would decrease the exposure of personnel to the chemicals. The study estimated that a total of 2,500 hours of work per orbiter would be saved by automating the tile inspection and waterproofing tasks.

Orbiter update

DISCOVERY...Next flight: STS-39/DoD (unclassified).

Launch - March 1991.

Work in progress: Preparations to replace three thrusters on orbital maneuvering system pod. Main propulsion system gaseous oxygen system leak checks. Cleaning of the payload bay. Closeouts of the aft compartment. External tank door function test.

Work completed: Leak tests of two orbital maneuvering system thrusters and weld checks of a third thruster. Water spray boiler steam vent nozzle replaced. Check out of the Flipper doors.

ATLANTIS...Next flight: STS-37/Gamma Ray Observatory.

Launch - April 1991.

Work in progress: Water spray boiler leak and functional tests. Auxiliary power unit functional tests. Preparations to install the forward reaction control system. Flutter buffet instrumentation installation. Portable water servicing. Functional test of the waste containment system. Ku-band antenna testing.

Work completed: Main engine flight readiness test on main engines 1 and 3. Engine 2's controller backup channel halted during power up. Test could not be run on engine 2 and controller replacement is required.

COLUMBIA...Next flight: STS-40/Spacelab Life Science 1

Launch - May 1991

Work in Progress: Replacement of an instrumentation cable in avionics bay 1. Wing strut mold impressions. Modification to beef up the lithium hydroxide canister door in the middeck. Thermal protection system operations.

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EF-111 Raven keeps Iraqi radar screens confused

By Dan Moughamian
Staff Writer

Since the start of operation Desert Storm, there have been many aircraft which are talked about, most of them carrying out the massive strike operations which have marked this war since it is beginning. However, there is one aircraft which is equally critical to Desert Storm's success that really has not been discussed, the EF-111 Raven.

The Raven is the U.S. Air Force's dedicated Electronic Counter-measures aircraft. Without such capable ECM aircraft like the EF-111, and the U.S. Navy's EA-6B, Desert Storm would have a much reduced chance for success. The Allied fighters and tactical bombers would have a difficult time reaching their targets, as they would have no support aircraft electronically jamming the Iraqi defensive radar sights. Since it became operational with the U.S. Air Force in 1982, the Raven, or Spark Vark, as pilots affectionately refer to it, has been an extremely successful ECM aircraft.

The key elements of the EF-111's many complex and classified systems are the AN/ALQ-99 jamming system and the AN/ALQ-137 self-protection system. The AN/ALQ-99 was originally used on the Navy's EA-6B Prowler, who's success prompted studies evaluating a similar aircraft for the Air Force's inventory.

By the time that study had ended in the mid-seventies, the Air Force had clearly decided against purchasing an ECM platform based on the A-6, opting instead to use an

aircraft based on the F-111. The reasons for this decision to re-develop the F-111 into an ECM aircraft stemmed from the fact that the EA-6B was subsonic and short on range. However, it was Grumman, not General Dynamics, who was named prime contractor for the EF-111 program.

The obvious reason for this decision was Grumman's past experience with the EA-6B and its AN/ALQ-99 jamming systems. All EF-111 aircraft currently being used have been re-manufactured by Grumman; the original aircraft were produced by General Dynamics in Fort Worth, Texas. Grumman used its facilities in Calverton, New York to build, test and evaluate all EF-111 aircraft.

Externally, the EF-111 differs greatly from conventional F-111's. The most distinguishing feature of the EF-111 is the huge tail-fairing, located atop the vertical stabilizer. Also, noticeable upon closer inspection of the Raven, is the large "canoe fairing" which is located on the underside of the aircraft. Both of these fairings house the AN/ALQ-99's many components and complex jamming systems. There are also two, small bulb-like antennas which are located directly above and slightly forward of the EF-111's engine intakes.

These antennas house the AN/ALQ-137 self-protection system. Other external variations on the Raven include a flat-grey paint scheme, upgraded and specialized cockpit systems, and improved engines. The EF-111 is always flown in an unarmed condition, using its ECM systems and speed to protect itself over the battlefield.

...The Raven is the U.S. Air Force's dedicated Electronic Counter-measures aircraft...



Spark Vark..

The EF-111 flies high over head on a radar jamming mission. Showing off its over all clean appearance since it carries no weapons.

The EF-111's jamming systems allow it to detect, identify, and automatically jam hostile radar systems, all the while monitoring the battle so that if a new threat arises it too can be electronically crippled by the EF-111's systems. When the Raven does its job in operation Desert Storm, the Iraqi radar screens will be overloaded with false

returns. This will effectively incapacitate any ability the Iraqi's have to distinguish the real attacking aircraft, from the EF-111's electronic noise. Obviously, this gives allied aircrews, for all intents and purposes, a free shot at whatever their targets might be.

New modifications on Quicksilver

By John McDermott
Aeronautics Editor

Quicksilver Enterprises has announced a number of changes to their leading two-place light aircraft, the GT-500.

Most conspicuous are a new two-place windshield and doors that provide complete enclosure for pilot and passenger.

There is virtually no loss in visibility with the doors which can be used in a partially open or closed position.

They can be completely removed in a matter of minutes.

The doors are available as a retrofit for existing GT-500's and are sold as an option with new aircraft. The doors increase cruise capability by 10 m.p.h.

The configuration of the new windshield provides more headroom for the front seat pilot and adds to the

appearance of the aircraft. To accommodate the door installations, aluminum is now being used as a rear fairing in place of fabric.

Steel landing gear legs are now replacing aluminum units that were used on the prototype and early copies of the GT-500.

This, in turn, has allowed for the installation of a new, more effective hydraulic disc brake system that is accessible to both seats.

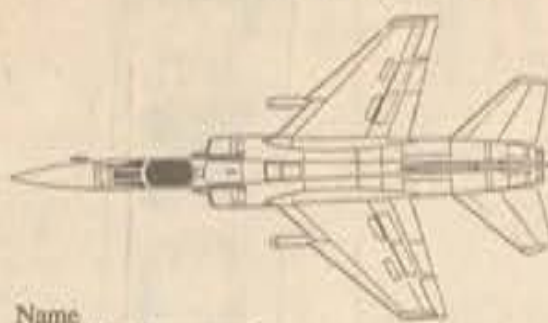


Quicksilver...

New modifications on ultralite kit flies high overhead.

The flap actuation lever has been moved to a more accessible, easier to use location, and an electric starter is now available as an option and allows the use of the pull starter as a backup.

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Calvin and Hobbes

by Bill Waterson



Far Side

by Gary Larson



Mister Boffo

by Joe Martin



Mother Goose and Grimm

by Mike Peters



Space research program announced

The Florida Space Grant Consortium (FSGC) has announced an Undergraduate Space Research Participation (USRP) program for Summer '91. The USRP program is designed to provide opportunities for students to become actively involved in ongoing research under the supervision of eminent faculty and researchers and to enhance students' interest in graduate study and careers in a wide variety of aerospace-related areas. To apply for this program, a faculty researcher may propose to mentor an undergraduate student during a 10 week Summer '91 research project. A \$2,000 student stipend plus additional funds for research of women, minority and disabled students. Contact the School of Graduate Studies and Research for additional information.

Naval lecture offered

The School of Graduate Studies and Research is pleased to announce a lecture on Research and Development of Training Systems for the US Navy and Marine Corps. The presentation will be on Tuesday, Feb. 12, 1991 from 1:25 to 2:25 p.m. in the Riddle Theater (A Building, Room 101). The guest speaker, Mr. Hank Okraski, Chief Scientist and Director of Research and Engineering at the Naval Training Systems Center, will speak on "NTSC: It's Mission, Plans and Programs, and R&D." Faculty, staff and students are encouraged to attend. For additional details, contact the school of Graduate Studies and Research.

Spring degree applications available

Applications are being accepted for those expecting April 1991 degree completion. Come to the Registration and Records Office to complete an application to receive an evaluation.

For those students anticipating summer 1991 graduation, the Records and Registration Office suggests that you fill out your Degree Completion Application for a preliminary evaluation for degree completion. It is especially important for those summer applicants anticipating attendance at the Spring 1991 ceremony to apply at this time.

Applications are available in the Registration and Records Office on the second floor of the John Paul Riddle Student Center Extension.

Middle East support group meets

A Support Group, for the ERAU Community who have family/friends serving in the Middle East, will meet on Thursday, Jan. 31, 1991 at 7 p.m. in the Student Center, Room 114D (Conference Room next to the switchboard). If you would like additional information, or if you are interested and unable to attend, contact the Counseling Center, at ext. 6035.

Primary Flight Tutoring Session

A new study group will begin on Tuesday, January 29th. The study group is designed to help students having difficulties in FA110, FA105, AS150, and AS180. It will run every week on Tuesday and Wednesday nights from 1830 - 2000 in room G105 until the end of the semester. There will be no set schedule of topics to be discussed. Students from FA417, the Certified Flight Instructor course, will be available to help students on a one to one basis. Students who have questions or don't quite understand something please bring appropriate materials in that area of concern. All students are welcome. This is an initial effort, if demands warrants the times and days can be expanded. If there are any questions contact Ken Stackpole at 6890 or Mike Wiggins at 6832. This has been coordinated by ERAU flight DEPT. and SGA.

Financial aid packets available for coming school year 1991

Financial Aid packets for the 1991-92 school year are available now in the Financial Aid Office in Spruance Hall.

Apply for next year's financial aid now. Priority will be given to everyone who applies before April 15. However, since applications are processed in the order that they are filed, applying early will give you an advantage.

You can do some things to speed up the financial aid process for yourself: 1) Apply early, 2) Read the instructions thoroughly and carefully, 3) Provide accurate data on the application, 4) Quickly provide documentation requested by the Financial Aid Office, 5) Check your ERAU mail box frequently. All campus offices will communicate with you via your box, 6) Ask questions.

The Financial Aid Office is located downstairs in the north end of Spruance Hall. Our service windows are now open from 8 to 5 p.m., Monday through Friday and the phone number is 239-6300.

Senior Class to hold meeting

The first meeting for all April, 1991 graduates will be held on Tuesday, February 5, 1991, at 8 p.m. in the Student Center. I will review graduation information at that time. Since there is no rehearsal for graduation, it is very important that you attend.

Elections for Senior Class President and Vice President will also be held. If you are interested in running for either office, please schedule a time to meet with me to complete your application by Friday, February 1, 1991. The Senior Class Council will also be secured at this meeting. This group consists of 20 to 35 volunteers from the class, who will secure discount hotels for graduate's guests, raise funds for the class party, keep the class informed of their progress, and socialize prior to graduation. If you are interested in being on the council, we will meet immediately after the graduation meeting to get organized.

Student debt counseling available

Staff members from Student Financial Services and the Financial Aid Office are available to meet with you to assist you in planning the payment of your outstanding tuition. Please note, this is not a payment-on-demand session. This is a chance for you to meet with University personnel to discuss your debt, how to meet your payment deadline and remain enrolled.

If you would like to take advantage of this service, please contact the Student Financial Services Office at 239-6285 to arrange an appointment.

ACROSS

- 1 Entrances
- 6 Citizen of Rome
- 11 Herb of pea family
- 12 Expunges
- 14 Printer's measure
- 15 Expert
- 17 Saint: abbr.
- 18 Perform
- 20 Take unlawfully
- 21 Goddess of mischief
- 22 Falsehoods
- 24 Household pet
- 25 Distance measure
- 26 Detective: colloq.
- 28 Banished from one's country
- 30 Oolong
- 31 Limb
- 32 Sewing implement
- 35 Guides
- 36 Monster
- 39 Snare
- 41 Break suddenly
- 42 Greek island
- 43 Strip of leather
- 45 Cravat
- 46 Spanish for "yes"
- 47 Confined
- 49 Compass point
- 50 Book of Old Testament
- 52 Joined
- 54 Subject of discourse
- 55 Small stoves

DOWN

- 1 Writing implement
- 2 Note of scale
- 3 Abstract being
- 4 Diving birds



COLLEGE PRESS SERVICE



Last week's solution.

- 5 Sew
- 6 Tell
- 7 City in Russia
- 8 Insane
- 9 Equally
- 10 Cuddle up
- 11 Toss
- 13 Spirited horse
- 16 Meadow
- 19 Seesaws
- 21 Bodily infirmity
- 23 Tanned skin
- 25 Soles with mud
- 27 Hindu cymbal
- 29 Indian memorial post
- 32 Din
- 33 Self-centered person
- 34 All
- 35 Sculptured likeness
- 36 Lifts
- 37 Haste
- 40 Sea eagle
- 43 Stalk
- 47 That woman
- 48 Noise
- 51 Symbol for thorium
- 53 Symbol for tantalum

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→ Autos for sale

1984 RED Buick Skylark—AC stereo power-steering 79000km. Perfect running condition. Sporty looking. \$2900 or Best Offer. Call 761-5620

1980 Mazda RX-7—Blue, very strong engine, body just a little rough. Must sell very quickly. \$1000/OBO. Call 239-5983 after 2 p.m. or leave message.

1981 Audi 5000S—New Paint (silver), New Pirellis, New Carpet, New Front Seats, Am/Fm Cassette, 5 Speed, Runs Excellent. Must Sell—Need Tuition Money \$4,000/for Best Offer Call Jeff at 756-3298.

1982 Buick Century—white, V6, Power steering and brakes, automatic, A/C, good condition. \$975. Call Duke 257-4321

1988 Yugo—Runs Great, Clean inside and out. \$2,000 Neg. Call 253-2513 Leave Message.

1982 Camaro—Automatic, air, power steering and brakes, tilt wheel, cruise control, stereo, mag, rwd performance tires, great shape. \$1550 call Duke at 257-4321

1987 Scirocco—16V, red, loaded, \$8900. Call 238-3063 after 6 p.m. or Box 3321

1983 Honda Ascot—Excellent condition, new brakes, tires and lights, no rust. Call Brian evenings 673-9836. Asking \$900

→ Cycles for sale

1982 CX 500 Turbo (Honda) MOTORCYCLE FOR SALE—Limited Edition Gold Rims. All Service Records Since 11,000 miles. \$1,500 Or Best Offer. Call Perot At 767-9616.

→ Misc. for sale

MOBILE HOME FOR SALE—PORT ORANGE, FL. OFF MADBLINE AVE. LANDINGS PHASE II SATILLS MODEL DBL. WIDE 24x56 3 bedroom 1 square room 2 full baths dining room living room kitchen dishwasher utility room (washer/dryer optional) Refrigerator w/ ice maker Gas range Central heat pump Double roof. Main owner must be 55 yrs. of age 2nd owner over 35. Asking price \$17,900.00 Lot rent \$200.00 mo. Contact Barbara Willis Service Center-ext. 6500

APPLE MACINTOSH COMPUTER—1 MB RAM, 10 MEGABYTE HARD DISC, Imagewriter Printer, Software. \$650.00 Contact Professor Voshury at X-6765 OR 767-7305

FOR SALE: PC COMPATIBLE COMPUTER with printer—8088/ 7.14 Mhz, Ram-512k, 20 MB HardCopy Two-5.25" Floppy Drives, Mouse w/ Hercules graphics, and lots of software. Great condition. Call Jeff at 338-4039 \$500/OBO.

FOR SALE: TV STAND \$20—STEREO CABINET \$40—Curling Ibar with 70lb. in Plates. \$30. Call 274-5016.

King Instrument Written Study Course and weather video, VCR-IFR refresher, ATC comm. video and more \$70. Avstar \$30. Fred 252-6527

MGB Parts (mostly motor)—pistons, carburetor, oil pump, oil pan, etc. Call Tom for list and prices 255-0676 or stop by ACL apt. 102

Shoes full face helmet—with tinted visor 6 mo. Old. (a) \$100.00 Call Fred at 252-6527

FOR SALE—Security Shade for rear hatch area—Vias '82-91 Camaro/Firebird-New in box, never installed. With all hardware. \$75/OBO. Call Kevin at 761-6200 or Box 8493.

Entertainment Center FOR SALE—Oak, Excellent condition, \$110.00 Call Perot at 767-9616.

Ray Bans—Brand New! \$25.00. Contact Mike at 238-0061.

Scuba gear (new)—Two full sets will sell separately. Call Robert after 6 p.m. 756-8267

Queen size water bed with bookcase headboard, heater and mattress. Call Robert after 6 p.m. 756-8267

Entertainment center for sale—Oak, excellent condition \$110. Call Perot at 767-9616

Sectional couch and coffee table with pull out bed (queen size). Call Robert after 6 p.m. 756-8267

For sale—guns, SKS, 7.62x39, \$200, mossburg 12ga., Bullpup, \$250. Box 9176

Living room set for sale, contemporary style, naive, excellent condition, couch and love seat, \$550/OBO. Call Perot at 767-9616

For sale: Stereo outfit. Technics 100 watt amp, Awia cassette deck, 10 band channel graphic equalizers, and Bose 401 speakers. All in great condition for only \$675/OBO. Call Jeff @ 238-4039

King size waterbed, motionless with heater, drawers, padded headboard. Call Robert after 6 p.m. 756-8267

Desk for sale \$30 Call Robert after 6 p.m. 756-8267

Glass dining table and coffee table and 4 chairs for sale \$150 756-3533

Carver CD Player DTL-200 like new. Call Robert after 6 p.m. 756-8267

TV for sale—19" color SHARP, works great, \$150. Call Chad 756-9238

CD's for sale—Best offers. Call 255-1067. Ask for Bush

CLASSIFIED AD POLICY

- Non-commercial classified advertising and personals are free to the student body, faculty and staff of Embry-Riddle with a 35 word limit.
- All other non-commercial advertising is \$10 with a 35 word limit. Each additional word is 10 cents.
- Commercial advertising is available through the Avion advertising department.
- Classified advertising is carried out by filling out a classified ad card in the Avion office.
- Only one classified ad per card. Name and address of advertiser must be included for the ad to run.
- Only paid ads will run for two issues and may be renewed by filling out another classified ad card.
- No classified ads will be accepted over the phone.
- For more information, stop by or call the Avion office at (904) 239-6049.

LEATHER JACKET—Military issue A-2 by Cooper. Excellent condition, size: L. \$180. Call 767-4051

For Sale: PMI Long Barrel Paintball Gun. Powerful!! Great condition! Comes with many extras. Don't get even-get ahead! Everything for only \$100/OBO. Call Jeff @ 238-4039

For Sale: Realistic PRO-34 scanner, like new, great for pilots, 200 channel programmable. New \$325, asking only \$225. Call Jeff @ 238-4039 for more details.

→ Roommates

ROOMMATE NEEDED—MALE OR FEMALE FURNISHED PORT ORANGE HOME washer/dryer/garage/cable. 235/- + one-third utilities NO LEASE/NO DEPOSIT. Call 322-2220

ROOMMATE WANTED—Professional airline pilot has room in rent in townhouse two miles from ERAU. Private bath, hot tub, washer and dryer. No lease/no security. \$300 mth + 1/2 utilities. Call 760-7502

1 bedroom, 1 bath, all-house privileges, 1/2 electricity, 1/2 water. \$100 deposit, \$150/month. Contact Neil 252-9670 or Box 6457

FOR RENT—Nice, warm room, with all the utilities, furnished, private entrance for a Professor or Student who will live on Weekdays. For Nice, Sober, No Smoker. Call evenings-258-5901. \$170-Month.

→ Miscellaneous

Looking to buy an expensive PS/2 or a cheap made in Japan clone? Don't! I'm selling cheap, a Zenith AT computer (made in USA) with a 286 CPU, 40 MB hard drive, both 3.5 and 5.25 inch floppies, a high resolution color monitor and a 1200 baud modem. Must sell. Contact Jose box 5466

Diamonds are forever on Valentine's day! 1/3 ct. diamond stud earrings and 1/4 ct. diamond pendant. Written appraisal, \$935 asking \$635/OBO. David 676-0487 Box 81164

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Resume Service—Fast, easy, dependable service. \$3 for set up and ten copies, \$8 includes disk with resume. Call 238-1957 to set up service. NOW!

Any Riddle students or faculty interested, willing, and capable of forming a road racing training squad (bicycle riding) and of fairly good experience, equipment, and intent, please call Ed Kohnke at 788-16658 or drop me a note at Box 3012.

Getting tired of those IBM games you bought and used to love? Me too! Call me, perhaps we can swap original software and manuals to someone else can enjoy your's; and you'll have a new game to fascinate you for a while. Gary 252-1251

→ Personals

SPUH
It's amazing how we originally set it to a five minute limit but it seems to always last much longer. Shall we try seven next time? Or how 'bout eight? And remember, some people have fragile toes!
THAM BUNNY WITH PIN

I laugh at you all. What you don't know will hurt you.
SWP

PRD
When are we going to break five hours? Relaxation is still very important.
THE MAD TYPIST

MOVIE DUDE
Please remember to order a cartoon for the movie next week! We'll have to try Spanky's again sometime.
BALCONY SECURITY

TO MR. TALL, DARK AND HANDSOME WHO IS THE OWNER OF THE BROWN PAISLEY SHIRT

You have the most gorgeous, piercing, blue eyes! I usually only see you around lunch time and would really like to talk to you, but because I am actually a little shy, I am unable to. From seeing your actions I am making the assumption that you are probably a classy and interesting guy. I hope you are having a great day and if you would like to respond, I will be reading the Avion next week.
BASHFUL BUNNY

MOLLY
I'll always come back. I love you.
YOUR BIGGEST FAN

OCHID
It is nice to talk to you. Thanks for being a good friend. Good luck in ERAU.
GARFIELD

PSW
Can dreams come true this at we chase?
FOX

JEY SWP
Keep on walkin' babe!!
A DRIVER

WEED
Congratulations on finally finishing 205. You have the official record: 11 months, 20 days.
CHUCKY AND CAPTAIN

NEW ENGLANDER
I know we are both busy, give me a call sometime. See ya around.
WORLD TRAVELER

SFB
Thanks for your support.
AVION

KRESS
We all hope you feel better soon (because nothing's getting done). Quadraplegia isn't that bad you wimp.
YOUR EVER-LOVING STAFF

LISA
People in glass houses shouldn't throw stones. Complete control, eh??
PARY

SWP wants a fresh approach to an old theme. Weary of the "let's-just-be-friends" philosophy. Need a quick, fun relationship with a thoughtful guy. Will consider all replies. Write to box 5366.

TO ALL AMERICANS:
What does Freedom mean to You?

TO AVION STAFF
You thought you were in control. You thought the decisions were yours to make. But you were wrong! Your measley little lives are mine to command! Suffer in silence human scum!
VENTURA

TO THE LITTLE RED HEADED GIRL ON 2ND FLOOR

You're the most interesting person on campus. I'd like to get to know you better.

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Former Cway Eddie employees to form a club. Only two members so far, need more. Contact the Avion or box 6365

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16 MHz Speed 16MHz
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3.5" Floppy 3.5" & 5.25"
PC sound Sound Adlib
Desktop Case Tower
Yes Mouse Yes
No Joystick Yes
3.0 Windows /386
\$2349 Price \$1799
The Protek costs less because I own it and need to sell it. It's 6 mos. old and in perfect condition. The monitor is unused. \$1488 without VGA. \$1725 without Adlib Sound.
Lv. Message 238-7355

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FREE Admission, Free Gourmet Buffet,
Free Drinks!**

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Wet -T-Shirt Contest
Win Cash!**

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Review, For the Girls!**

**Every Night Of The Week
Feed Your Face
Free Food, Free Drinks
All You Can Eat and Drink!**

1990

Candy Store

1991

Thursday

January 31st, 1991

1 Year Anniversary

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Free Admission, Free Drinks, Free Buffet 8-10pm**

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(Seabreeze & Grandview Ave)**