THE DISH

JUNE 1976

OUR SUN

Ever wonder about our Sun what future it holds for mankind. I say our Sun because astronomers have discovered other suns in other solar systems. Our sun is five billion years old and is now at middle age. The sun moving with the stars, makes one revolution or orbit around the heart of the Milky Way galaxy ever 250 million years. The sun has made 20 such trips and will make 20 more before it burns out. At that time the hydrogen in the sun will be used and converted into helium. The sun's core will start to burn belium and increase in heat. The sun will get redder and be a red giant star. Planets will burn and collide, all life on earth will be gone before this, with oceans boiling and rocks melting down. When the sun finally burns out, within hours the sun will collapse to a small white star the size of earth and then darken to a cinder.

Our sun today is 864,000 miles in diameter and fills a volume one million times as great as earth. Within the sun is 99.9 percent of all material in our solar system leaving only .1 percent for all other planets, the moons, asteroids and comets.

The sun's equator turns on its axis once every 25 days and near-polar regions take up to 34 days. For some reason sunspots occure over a period of 11 years and then the magnetic fields in the sunspots reverse direction and is repeated making a 22 year cycle. The suns temperature at the surface is about 11,000 degrees and at the center 36,000,000 degrees F.

As scientist-astronaut Ed Gibson was orbiting earth in Skylab 3 on January 21, 1974 a brilliant light appeared on the western face of the sun. In minutes it had gone a thousand miles across the sun, and flared into a hot cloud with a temperature of several million degrees and exploded at a million miles an hour outward. In two hours the mass of fire had dissipated into the outer solar atmosphere. This was all photographed by Gibson and stated "we caught a very elusive target-the birth and total life of a solar flare. We have observed a flare as never before."

Our sun is very large but to other bodies in the universe is very small. The Stat Betelgeuse, in constellation Orion, is more than a million times as big as the sun. The sun is powered by hydrogen fusion, the flares are not thermonucler. Scientists are working on the sun to unravel its many secrets. With the help of the HELIOS satellites these secrets may be solved. The solar winds out of the sun and magnetic effects on earth is something else to solve.

No matter how much research is made about the sun and the knowledge received the life of the sun will one day come to an end. The following item was send to your editor and the death of sun may be closer than mentioned. "Three Rice University astrophysicists announced recently that the sun may contain a small black hole, about an inch in radius and ten times the mass of earth, which is gradually "eating up" solar matter, producing about half the sun's energy in the process....As matter accumulates in the hole, it will grow, causing the sun to dim and producing a hugh "photon bubble" which will push any remaining matter outward. The sun will then shine like an X-ray nova...the black hole will cause the sun to end its life only about 200 million years from now, much sooner than expected."

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On Dec 16, 1965, a Pioneer spacecraft weighing 140 pounds was launched by a Delta launch vehicle. The satellite was designed to operate for six months and to return data on the Sun and interplanetary space. After 10 years, this small spacecraft is still transmitting valuable data on the Sun, solar wind, cosmic rays, and solar magnetic fields. It has circled the Sun about a dozen times and has traveled in space more than six billion miles.

VANGUARD WORLD CRUISE

The tracking ship USNS Vanguard returned to Port Canaveral in February following an eight month cruse that carried it and its crew around the world. The ship is part of the Goddard Space Flight Center's Spaceflight Tracking and Data Network, and carried a technical crew of about 75, employees of the Bendix Corporation, plus a marine crew of about 88, employees of the U.S. Navy's Military Sealift Command. Its role since sailing from Port Canaveral last June 1975 included tracking and data acquisition missions for the Apollo Soyuz Test Project, Viking A and B, Atmosphere Explorer D and E, Geostationary Operational Environmental Satellite-A,(GOES-A) Dual Air Density, Helios-B and Communications Technology Satellite launches.

The journey began June 16, 1975, as the Vanguard sailed from Port Canaveral en route to Papeete, Tahite, via the Panama Canal. On station off Papeete, Vanguard supported ASTP, the first international manned space mission from the July 15 launches through the Apollo splashdown on July 24. With ASTP completed, the Vanguard sailed for Sydney, Australia, enroute to an Indian Ocean test support position for the Viking A launch on August 20. Following a short stopover at Port Louis, Mauritius, the ship was on station for the September 9 Viking B launch. The next port of call was Mobasa, Kenya, on the African east coast. The ship sailed from Mobasa September 23 for its test support position for the Atmosphere Explorer-D launch but when the launch was delayed, again visited Port Louis, which during ensuing months was to become a frequent stopover.

Again at sea for the Atmosphere Explorer-D launch on October 6, the Vanguard returned to Mauritius on October 8, anchoring off Port Louis only long enough to onload GOES-A simulation test data and depart for its support position for a GOES launch simulation on October 9. At Port Louis again on October 10, the ship was underway on October 13 for its GOES station to participate in additional simulations, returning to again anchor off Port Louis for a few hours, followed by its return to sea, first to obtain data during a pass of Interplanetary Monitoring Platform-B, then for a move to its station for the October 16 GOES-A launch.

Following the GOES-A launch, the Vanuard was docked at Port Louis almost a month, returning to sea for the November 13 Atmosphere Explorer-E launch, then sailing to Mahe Island of the British Seychelles Island group in the western Indian Ocean.

On-station support of the Dual Air Density spacecraft launch on December 6 was followed by another month-long sojourn at a dock in Port Louis.

In mid-January, the Vanguard was on station for support of the Helios-B and Communications Technology Satellite launches, returning to Port Louis January 20 for resupply and departure the same day for Port Canaveral.
(From the Spaceport News of February 20, 1976)

In a couple of letters from Capt. Anderson indicated the USNS Vanguard was to be taken out of service on April 15th for approximately 11 months. Later in the summer Capt Anderson will be going to the USNS Redstone, which does Air Force work. If covers are to be serviced for any events, you will be advised. Do not send covers to either the Vanguard or Redstone at this time.

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Col. ASA B. Gibbs (USAF Ret.), 63, died recently at Brevard Hospital in Florida. A vetern of missile research and development and space programs, he had been commander of Cape Canaveral when it was an auxiliary AFB. Before his retirement in 1963 he was chief of NASA Launch Operations Center Support Office. During his tenure the first U.S. ballistic missile, the Army Redstone, was launched. He also took part in the first launches of the Snark, Bomarc and Navaho missiles. First director of the Missile Test Center (now Eastern Test Range), Colonel Gibbs was program officer for the Vanguard satellite program. Prior to his NASA assignment he was deputy director for the Atlas project AF Ballistic Missile Division.

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A new star-tracker, called "STELLAR"(for Star Tracker for Economical Long Life Attitude Reference), is under development at the Jet Propelsion Laboratory for use in a variety of manned and unmanned mission applications, the first of which will be in connection with an aircraft telescope experiment designed as a precursor to the Shuttle Infrared Telescope Facility being developed at Ames Research Center.

NASA ADMINISTRATOR JAMES FLETCHER REVIEWS 1974 submitted by Eugene Bella

(This is in part a transcript of NASA audio service NASA special report #117, released January 1975)

New Years's Day 1974, was celebrated in space by Skylab astronauts Carr, Gibson, and Pogue. New Year's Day 1975, saw a small automated space probe, Pioneer, coasting toward a rendezvous with the planet Saturn...Speaking to NASA's 1974 accomplishments Dr. James C. Fletcher, NASA Administrator, had these comments:

"I must say that this last year has been perhaps the most productive year since I've been at NASA...Beginning with the Skylab in which we really finished a 270-some odd day program that started out to be a failure, it accomplished way more than we ever expected to...And then winding up with the fly-by past Jupiter on the way to Saturn, without a hitch....

The impressive thing...is the fact that a large number of the missions, perhaps more than half, were done for people outside of NASA which is a very definite trend. We find more and more commercial launches for example, communications, satellites, both domestic and international, a large number of NOAA, and a fair number for foreign governments...the Heleos which was launched early in December and the Symphonie, one right after the other were quite spectacular achievements. But in addition to that we launched for the British the Skynet...

NASA Research and Development during 1974 continued in Earth orbit with a pair of advanced applications spacecraft---vehicles testing out improved communications and meteorlogical equipment and techniques which could be forerunners of operational systems of the future. A new Applications Technology Satellite, ATS-6, is crammed with sophisticated communications gear. Launched this past year, the vehicle will carry out a multitude of complex experiments...

...A small meteorlogical satellite, SMS, was successfully orbited in 1974. SMS, of course, is just introducing a new era in meteorlogical satellites or weather satellites and is the first of a series of the kind...All those taken together plus balloons plus low altitude satellites are going to be part of the global weather system that will allow us, hopefully, to predict ahead two weeks, instead of two days, what the weather is going to be, not just locally but worldwide. I think that is going to turn the whole business of forecasting upside-down...

Studies of other planets of the Solar System during the year, also included detailed observations of Venus and Mercury by a singe Mariner 10 spacecraft.

We called that the Mariner/Venus/Mercury before it was launched. We only built one of them and it qorked pretty well...

Aeronautical research within the agency during 1974 continued to focus on pressing needs and requirements of today's and tomorrow's aircraft. In NASA laboratories, and through actual flight testing, work concentrated on ways of increasing safety and passenger comfort and convenience; and on methods of reducing noise levels of jet aircraft flying over homes and offices...."

Turning to manned spaceflight, NASA Administrator James Fletcher continued, that 1974 was a year in which crewmembers, flight controllers and mission managers of the United States and Soviet Union entered into the final stages of preparation for this coming July's joint space link-up, between a manned Apollo and Soyuz spacecraft. It's been less than three years, since the formal agreement was signed by the two countries

As 1974 drew to a close, over 30,000 people across the country were involved in the development of a re-useable Shuttle, capable of flying to and from Earth orbit over and over again, at least 100 times, is to be the space workhorse of the future.

"NASA is primarily an R & D agency, but it looks more and more apparent to me, that we'll have to be operational agency as far as launching vehicles are concerned, since such a large fraction of our launches are for other people...."

On a closing note, he had these reflections on the agencies' activities during the past year:

"One thing that is worthy of note, that happened during this past year that marked a milestone for NASA, is that we've been able to achieve all of these really quite unusual events and move into this new era, with a lower budget all the way around than we've had before. By that I mean, not that the actual dollars are lower, but the number of people involved in the space program are less, because of esculation..."

TRADING & SELLING CORNER

Giant Space Cover List-Project Mercury to Space Shuttle-Many Covers Illustrated-Send $1.00 Postage. Sean Marsar, 6 Helena Ave., Bethpage, New York 11714.

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JET PROPULSION LAB STAMP CLUB First Day and Commemorative covers. FREE list. Mike Gauthier, 9550 Gallatin Rd., Downey, CA 90240

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Send for list of covers of FMF Local Post, listed and illustrated in past issues of The Dish. Joseph J. Frasketi, Jr., P.O. Box 2114, Ft Myers, Fla., 33902

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Fifty-nine popular topical subjects, each adapted from actual stamp designs of 20 countries appear in vivid multi-color on sheets of philatelic seals produced by the American Topical Association. The 5x8 inch sheet contains 40 seals of various subject, one is space(rocket, astronomy, communications). Sheets are $1.00 each, 6 for $5.00, 15 for $10.00, 25 for $15 mailed flat and postpaid from ATA, 5014-C West Center Street, Milwaukee, WI., 53210.

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Get you name into Bob Boudwin for the next list of space covers from, Edwards, VAFB, Wallops, Cape, JFK, Palestine, Alaska, WSMR, Alamororgo and many others. Robert J. Boudwin, 1119 Harkin Ave., Woodbury, NJ 08096.

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Covers available from the Kourou Launch Facility. Most covers are printed, information on covers is available by sending a Stamped Addressed Envelope to Bob Ekas, P.O. Box 295, Chicora, PA 16025.

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NSTL is not prepared to offer or service covers for the Space Shuttle Engine Tests. I will service your stamped addressed covers at 15¢ each under 100 and over 100 10¢ each, hand cancel is 25¢ each. These will have a cachet with Engine & Test number and duration. Send a sufficient supply as many test will take place. Julie Buchanan, 201 Rooks Dr., Slidell, LA 70458.(Editor: Illustration in next issue of Dish)

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SPACE STAMPS AND COVERS. Send 24¢ for lists of worldwide space stamps, Apollo-Soyuz, Trucial States, Tracking Stations, etc. Also autographs. No U.S. covers. Leo Malz, P.O. Box 566, Forest Hills, NY 11375

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FOR SALE: Enterprise-MA 7-Recovery Cover's, May 24, 1962, UA, 3 RSC, Franked with 4¢ Project Merc. Stamp. Limited supply, $4.-ea. plus #10 SASE. J. Hesterly, 305 Northgate Lincoln, IL 62656

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Summer of '76 List #16 available on Space covers, Oceanographic covers, Ship covers, Antarctic & Deep Freeze cover and many others. Art Silhanek, 526 Willow Ave., Piscataway, NJ 08854.

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The JET PROPULSION LABORATORY STAMP CLUB will issue four Special Commemorative Covers for the VIKING 1 and VIKING 2 with special cachets and special cancellation on the respective days, canceled from Pasadena, CA. These will be Mars Orbit Insertion #1, June 19, 1976; Mars Landing #1 July 4, 1976; Mars Orbit Insertion #2 August 7, 1976; Mars Landing #2 September 4, 1976. Cost is 50¢ cover with a large #10 SASE. Order from-VIKING COVER, JPL STAMP CLUB, P.O. Box 771, La Canada, CA91011.

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LIST of duplicate covers of Ships, Space, US and UN FDC, HPO, Antartic, Artic, First Flights, Exhibitions and etc. Send SASE (2 ounces 24¢ postage) Bob Ekas, P.O. Box 295 Chicora, PA 16025.

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Astronomy and Philately is the title of the new ATA handbook #90 slated for publication soon by the 10,000-member, 90 country organization. It will be arranged in four major sections:checklist of stamps by countries,checklist of stamps by sub-topics, brief biographies and checklists of stamps for astronomical personalities, and an an extensively illustrated list of special cancellations. Order from ATA, 3308 North 50th St.,Milwaukee WS 53216.Price $4.00.

Tracking Station Report

Since the manned flight have come to a halt the tracking station information has been quiet. For the unmanned flights listed under the Launch Schedule the stations have been coming through with covers. At this time information is not available on the stations taking part in the Viking landings on Mars. I presume the Deep Space Network will take part and it is possible some of the more powerful observatories will be having a look. It is possible some of the communication stations will be taking part.

For the HELIOS-B covers have come back from the following address and presume they have an observatory.

German Exploration & Experimentation Institute
Cologne West Germany

New Addresses (letter before each indicates the category each will be placed in)

C Umm Haraz
Earth Satellite Station
Sudan

Backer Nunn Space Track (Johnston Is)
APO San Francisco CA 96305

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Covers will be serviced for balloon flight from the Kourou facility. Send covers with French stamps or one IRC per cover to:

Club Philateliquede Kourou
Boite Postale 306
97310 Kourou, French Guyane

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On page 4 Trading & Selling Corner is listed an address and details on where one may have covers serviced for Space Shuttle Engine Tests and Ames Research is servicing.

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In the March, June and December 1975 issue and the March 1976 issue appeared the name of the city of the Satellite Tracking Stations the world over. As this list continues from A-Z help is needed with the addresses.
Listed are OPTICAL and RADIO TRACKING STATIONS. (1) Visual Tracking Stations (2) Photographic Tracking Stations (3) Lasor Tracking Stations (4) Lunar Laser (5) Doppler Tracking Stations (6) Radar Tracking Stations (7) Interometers (8) Tracking Antennas

C.S.I.R.
P.O. Box 395
Pretoria,Transvaal
South Africa 1 5

T-158 South Africa 1 2
Colbyn, South Africa 1
Escombe, South Africa 1
S-107 South Africa 1 5 7 8
Murrayfield, South Africa 1
Riviera(Pretoria)South Africa 1
Valhalla(Pretoria) South Africa 1
Olifabtsfontein(Pretoria) South Africa 2 3
Paardefontein(Pretoria)S Africa 5 7

O-102 Spain 1 2
Barcelona, Spain 2

Estacion Espacial de Madrid
Orense, 11 - 5
Madrid 30, Spain 2 5

Instituto Nacional de Tecnica Aerospacial
Serrano 43
Madrid, Spain 5

D-106 Spain 5
D-105 Spain 5
S-105 Spain 8
S-106 Canary Is. Spain 5
FS-121 Canary Is. Spain 5

Geodetic Institute
Uppsala University
Hallby, Uppsala, Sweden 1 2 5

Lovo, Sweden 2

Chalmer's Institute of Technology
Uppsala, Sweden 5

Onsala, Sweden 7 8

Observatoire de Geneve (T-146)
1290 Sauverny (Versoix)
Switzerland 1

Astronomisches Institut
Universitat Bern
Sidlerstrasse 5
3000-Bern, Switzerland 1

Zug, Switzerland 1
Zimmerwald, Switzerland 2 3

Ecole Polytechnique Federale
Sternartstrasse 7
Zurich, Switzerland 5

Afgoy, Somalia 2

E-105 Seychelles 5

Tafuna, Samoa (U.S.) 5

Taipei, Taiwan Rep of China 1

Royal Radar Establishment
St. Andrews Road
Great Malvern, Wrcs, U.K. 1

X-106 U.K. 1 5

Survey Production Center
Geodetic Office
Elmwood Ave.
Feltham, Middlesex
England U.K. 1

Aldershot, U.K. 1
Ashley, U.K. 1
Avona, U.K. 1
Bournemouth, U.K. 1
Chelmsford, U.K. 1
Chesham, U.K. 1
Colchester, U.K. 1
Copthorne, U.K. 1
Cowbeech, U.K. 1
Crawleyridge, U.K. 1
Doncaster, U.K. 1
Dymchurch, U.K. 1
Earlyburn, U.K. 1
Edinburgh, U.K. 1
Farnham, U.K. 1
Frimley, U.K. 1
Leicester, U.K. 1
Lewes, U.K. 1
Malvern, U.K. 1 2 6
Stevenage, U.K. 1
Sudbury, U.K. 1
Sunningdale, U.K. 1
Thames Ditton, U.K. 1
Tremadoc, U.K. 1
Waltham Abbey, U.K. 1
Warrington, U.K. 1
Willowbrae, U.K. 1
Earlypoint, U.K. 2
S-104 U.K. 2 7
T-134 U?K? 5

C-1 USA 1

AF Cambridge Research Laboratories
Hanscom Field
Bedford, Mass 01730 USA

O-1 USA 1

Department of Astronomy
University of Texas
Austin, Texas 78712 USA 1

Arkon, Ohio USA 1
Albuquerque, NM USA 1
Albuquerque East, NM USA 1
Atlanta, GA USA (T-11) 1
Batavia, NY USA 1
Boulder CO USA (T-15) 1
Castle Rock, CO USA 1
Chattanooga, TN USA 1
China Lake, CA USA 1
Cleveland, OH USA 1
Colorado Springs, CO USA 1
Cuyahoga Falls, OH USA 1
Dallas, TX USA 1
Denver, CO (T-14) USA 1
Dayton, OH USA 1
Edinburg, TX USA 1
Fort Worth, TX USA 1
Framingham, Mass USA 1
Hartville, OH USA 1
Houston, TX USA 1
Kansas City, MO USA 1
Lake Forest, IL USA 1
Lima, OH USA 1
Los Altos Hills, CA USA 1
Madison, WI USA 1
Milwaukee, WI USA 1
New Orleans, LA USA 1
North Canton, OH USA 1
Oceanport, NJ USA 1
Panama City, FL USA 1
Paterson, NJ USA 1
Phoenix, AZ USA 1
Pittsburgh, PA (T-7) USA 1
Rochester, NY USA 1

WORLD IS A LAUNCH PAD (From Spaceport News)

Thumba...Foxmain...Kari Kari...Kourou...Chamical. You won't find these names on a travel agency's list of exotic vacationlands. They are in India, Canada, New Zealand, French Guiana and Argentina. These faraway places with the strange sounding names are launch sites used by NASA. They are among the 40-odd locations scattered about the globe that have echoed to the thunder of streaking Arcas, Javelin, Black Brant, Aerobee and Nike-Cajun sounding rockets.

NASA's sounding rocket program is managed jointly by the Office of Space Science and Office of Applications which provides launch vehicles and operations for the suborbital research missions of NASA; other government organizations such as the National Oceanographic and Atmospheric Administration, the Energy Research and Development Agency and the Department of Defense; universities; private industry; foreign governments; and international organizations.

Sounding rockets provide the ability to boost recoverable scientific payloads into and above the Earth's atmosphere to investigate phenomena associated with solar physics, magnetospheric physics, high energy astrophysics, galactic astronomy, aeronomy and meteorology.

From 1959 through June 1975, 1,879 missions were flown in the sounding rocket program. Of this total 1,611(nearly 86%) were successful.

Some of the launch sites are under United States control. Most are foreign locations where NASA has entered into cooperative agreements with the host country or organization. In these cases, NASA provides the launch vehicle while the cooperating agency supplies the scientific payload and range service.

The most active launch sites are White Sands, New Mexico; Wallops Flight Center, Virginia; Ft. Churchill, Canada; Point Barrow and Poker Flat, Alaska; Thumba, India; Andoya, Norway; Natal, Brazil; Kiruna, Sweden; and Kourou, French Guiana. Launches are also made from shipboard sites around the world.

A taste of adventure and a chance to rub shoulders with exotic lands and people are in order for they operate from such out-of-the-way places as the Kerguelen Islands in the Indian Ocean; the frigid wastelands of Canada's Northwest Territories and Greenland's Sundra Stromsford Fjord; and such pleasant climes as Kauai (Hawaii) Arenosilia (Spain) and Koroni (Greece).

Sounding rocket launch sites are being expanded as the scientific need requires. By the same token, sites are abandoned or closed for lack of further scientific interest, political considerations and economics.

NASA's sounding rocket progtam plays an important role in our national space program. It has yielded significant contributions to the understanding, prediction and use of Earth's environment, and thus to its betterment.

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COMMENTS

When receiving covers back from Tom Stafford with his autograph, enclosed was a Zerox copy of two covers, #1 and #2. They covers were autographed by Dr Pete J. Bartelloui, Chief of Medicine and the three astronauts. On the side was "Definatly not auto-pen. Notice difference in signatures between the two covers.

Covers sent to A-2 for NATO-C came back unserviced with a letter stating they were sorry but covers were received late. They do service if covers are received on time.

White Sands has a full schedule for May and June, there is a possible of 29 shots, including Aerobees, an Astrobee, a Tomahawk and others.

Jose M. Grandela of the Spain stations has been nominated Honorary Committee Member of SPACEPHIL 76 in the Netherlands.

In a letter from the father of astronaut Edward Gibson stated Edward is in Brerner West Germany for a year as consultant to the ERNO, Division of VW-Fokler. This is in conjunction with the Space Lab to go up in the Space Shuttle in 1980. It is expected he will once again be an active astronaut.

On page 4 in the February 21 issue of Western Stamp Collector "Collectors Voice" was a letter about the rip-off of some foreign countries issuing Bicentennial stamps and covers when it comes to the UN, that is a different matter and all is wanted is the US dollar. This rip-off has been going on for years with Space Stamps and Covers.

There is a growing movement within the space sciences community to explore the solar system from another dimension. The United States and the Soviet Union have always traveled in the same general plane-the disk of space in which all of the planets more or less lie as they orbit the sun. This is called the ecliptic plane and extends out from the sun's equator.

More than a hundred American and European scientists and engineers met at the Goddard Space Flight Center to discuss the importance of sending spacecraft north or south of that plane, possibly over the sun's poles. "To place a spacecraft in such an orbit brings expectations that we will witness new and exciting phenomena that we could neither observe nor predict from our present vantage point in the ecliptic plane," said Dr Lennard Fisk, an astrophysicists who organized the meeting.

The idea is for NASA and the new European space agancy to share in the expenses and scientific rewards of a mission to send spacecraft outside of the ecliptic plane. The Europeans would build the spacecraft and the Americans would supply the rocket. Several mission plans are under consideration for the early nineteen-eighties. One would be to launch two spacecraft on a Titan 3 rocket toward Jupiter, where they would be slung by the planet's gravitational force into orbits that would take them out of the ecliptic plane over the sun's north and south poles.

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The Pioneer 10 spacecraft, now halfway between the orbits of Jupiter and Saturn on its way out of the solar system, was making some small, unexplained orientation changes. The mystery has been solved by controllers at the Ames Research Center. The controllers said these changes were caused by failure of the spacecraft's sensors to remain navigationally "locked"on the proper star. During a routine change in spacecraft orientation required to keep the antenna pointed at Earth, Pioneer's star sensor shifted its "lock" from the star Betelgeuse to Sirius.

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Hugh Harris has been named Public Information Chief of Kennedy Space Center and Charles T. Hollinshead has been named Chief of Public Affairs.

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In the August 31, 1975 Grit-Readers Forum was "Life in Space". Thirteen opinions were listed and all agreed life in space excess, except one and he thought it a wasteful experiment.

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The Airborne Science Office at Ames Research Center recently completed an extensive simulation of a Shuttle Spacelab mission, using the CV 990 Galileo II. The mission was a joint NASA-European Space Agancy (ESA) endeavor, with Principal Investigators from Meudon Observatory near Paris; Gonigen University, The Netherlands; Queen Mary College, London; University of Southhampton in England; University of Alaska; Jet Propulsion Laboratory; University of New Mexico; University of Colorado; National Oceanic and Atmospheric Administration (NOAA), Boulder, CO, and Ames Research Center. Two U.S. and two European scientists, along with louis Haughney, the Ames Mission Manager, spent six days confined to the aircraft and living quarters trailer.

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Establishment of a program office to plan and develop payloads for the Space Shuttle has been announced by the Johnson Space Center. It will be known as the Shuttle Payload Integration and Development Program Office and will be managed by Glynn S. Lunney, formerly Apollo Spacecraft Program Manager and U.S. Technical Director for the Apollo Soyuz Test Project. The Apollo Spacecraft Program Office has been abolished. Personnel from that office and from the Payloads Coordination Office have been reassigned to the new program office.

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Dr George M. Low, will leave the government in June to become President of Rensselaer Polyrechnic Institute in Troy, New York. Dr Low is a graduate of Ressekaer and a Trustee of the Institute.

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A new communication satellite, the "Raduga" was launched in the Soviet Union on December 12, 1975. Its mission is to maintain around-the-clock telephone and telegraph communication, and retransmission of black-and-white and color TV programs to the "Orbita" network.

NASA TRACKING NETWORK

by Jose M Grandela

Most of the space cover collectors know quite a bit about space related facilities as launching sites, laboratories, observatories, etc. After so many years of collecting I still wonder if collectors know much about NASA space tracking support.

It is known NASA has two tracking networks, the STDN (Spaceflight Tracking & Data Network) formed by the old STADAN (Spacecraft Tracking & Data Network plus MSFN (manned Space Flight Network); and the DSN (Deep Space Network). NASA plans to remake a single network with the STDN and DSN to track all kind of spacecrafts, no matter if Earth orbiters, manned capsules or deep space probes, reducing the cost and personnel. Old tracking glories are not needed anymore (Canary Island, Grand Turk, Corpus Christi, Tannanarive, etc) and the few remaining will have a big oncrease in the work schedule. New dual equipment is being already installed in the more important tracking centers, as well as new training given electronic personnel.

Regardless of the future, TDRSS (Tracking Data Relay Satellite System) a minimum of three large space tracking complexes will be maintained in the World. The Mojave Desert Complex with DSS-11/12/13 & 14; the Madrid Space Station Complex (Spain) with DSS-61/62 & 63 plus STDN and NASCOM Switching Center; and the Australian Complex with DSS-42/43 & 44 plus Orroral Valley STDN.

By the way, do you know why deep space stations are numerically coded? When NASA first thought of building a World tracking network, they divided our spherical planet into numbered lunes, so Western US was Zone 1, Australia Zone 4, Africa Zone 5, Spain Zone 6, and Eastern US Zone 7. The second figure was given by the chronological order in construction, for instance DSS-63 (Roblede II) is the 3rd deep space station built at Spain or Zone 6.

New antennas will be installed at those three centers, removed from the closed stations, plus equipment as back-up and, of course completely new and much more sophisticated.

Looking closely to what the future will make at the three large World NASA space tracking complexes, I can only think of a futuristic science-fiction book. In this case the future is at hand.

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LAUNCH SCHEDULE

The dates given are not firm, schedules do change. Listed are flights, date, vehicle, range and stations.When something omitted, it is not know at this time.

FLIGHT	DATE	VEHICLE	RANGE	STATIONS
GP-A	Jun 24	Scout	WLP	ACN BDA ETR MAD MIL WLP GSC
PALAPA-A	Jul 8	Delta	ETR	ACN BDA GWM HAW MIL ARIA ETR GSC
COMSTAR F2	Jul 22	Atlas Cent	ETR	ACN BDA MIL ORR ETR GSC
ITOS-H	Jul 29	Delta	WTR	HAW MAD ULA WNK SEY SAM GSC
MARISAT-C	Sep 12	Delta	ETR	ACN BDA GWM HAW MIL ORR ARIA ETR GSC
RCA-C	Oct 29	Delta	ETR	
INTELSAT IVA-C	Dec	Atlas Cent	ETR	
NATO IIIB	Dec 2	Delta	ETR	
COMSTAR F3			ETR	

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A Soviet spy ship is cruising just off shoree of Kwajalein Atol of the central Pacific missile range, attempting to monitor America's top secret defenses against atomic attack. The white-hulled vessel "Primove" or "Primorye", described as one of the most completely equipped electronic snoopers in the world. Kwajalein is part of the Pacific missile range where all of America's defensive and offensive intercontinental ballistic missiles (ICBM) are tested. The Soviets always seem to know when a firing is going to take place. They always have one of their spy ships stationed off shore for the big ones.

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First Day cancellation of the Apollo-Soyuz pair (Scott 1569-70) was 1,427,046.

The world's most unusual warehouse is a bizarre and antiseptic windowless room at the Johnson Space Center, visited only solemn scientists in white nylon jumpsuits. The 840 pounds of moon fragments, which have been sectioned into 40,000 tiny samples, are hidden behind two massive steel doors secured by complicated locks. They are guared day and night by closed circuit TV cameras which silently moniter every move in the corridor outside. It costs a million dollars every year to maintain the collection of moon rocks, which are stored in nitrogen-filled steel chambers. Each chamber cost $50,000. To prevent contamination, samples are kept inside stainless steel canisters.

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A world renowned astronomer predicts "you might be watching TV and find the program interrupted by a message from another planetary world, the message will probably be in the form of geometric signals."

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Preparing for future space flight operations with the Space Shuttle, NASA is realigning two of its Headquarters office. Launch Vehicle and Propulsion Program in the Office of Space Science will be transferred to the Office of Manned Space Flight, while the NASA Directorate for Life Science, now in the Office of Manned Space Flight, will be transferred to the Office of Space Science. The name of the Office of Manned Space Flight was changed to Office of Space Flight. The new Office of Space Flight will be concerned primarily with launching space flights and conducting Shuttle operations, while Space Science will have responsilility for the science to be performed on these flights.

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Russia has been beset by failures of its radar satellites. U.S. analysts think faulty computers are to blame.

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China put its fifth satellite into orbit around the earth. It was the third successful satellite in 1975 and the second in three weeks.

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The U.S. should invest $8-billion in powerful radio telescopes said Dr. James Fletcher, who's headed NASA since 1971. The U.S. has only one radio telescope right now, it's at Arecibo in Puerto Rico. It was used in early 1975 to send out a message which will travel through our galaxy. It was in a universal code that can be understood by any intelligent form of life out there. Dr. Fletcher would like to see a whole network of these telescopes as he is certain there's intelligent life on other worlds.

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NASA reorganized the functions and reprting relationships of its Pasadena office. The reorganization, involved no loss of jobs, nor cuts in grade or salary for the 35 individuals working in the office. The office no longer reports to the Associate Administration for Center Operations at NASA Headquarters in Washington Instead there will be a Resident Legal Office reporting directly to the NASA General Counsel in Washington and a Resident Procurement Office, reporting directly to the NASA Assistant Administrator for Procurement in Washington.

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Space rescue from the Space Shuttle may depend on what looks like a beach ball. The ball will be carried by an astronaut to the troubled space vehicle and the passenger zip themselve into the airtight ball measuring 34-in diameter with pure oxygen. The passenger may find it a thight fit but will be able to look out on the world through a small peephole as the ball is towed by the astronaut to the Space Shuttle.

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The first astronaut not to be either an American or from the Soviet Union will probably be a West German. He could be short-sighted and wear glasses. Now will he have to be an experienced pilot. He will be for the future Space Shuttle.

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INTELSAT IVA F-2, the second in a series of improved INTELSAT commercial communications satellites, was launched on January 29, 1976. Twenty-two INTELSAT satellites have been launched since April 1965. Of five mission failures, two were because of onboard propulsion anomalies and three were caused by launch vehicle malfunction.

PIONEER/VENUS 1978-AN LOOK INTO THE MISSION by John J. Macco

NASA will send an orbiter and a miltiprobe spacecraft to Venus in 1978 to sonduct a detailed scientific examination of the planet's atmosphere and water.

Pioneer/Venus is the first United States missi n developed specifically to investigate the atmosphere of Venus on a planetary scale. The two spacecraft mission is to be launched in May and August 1978. Both spacecraft will arrive at Venus in December of 1978 with the orbiter scheduled to arrive five days before the probe carrying spacecraft. To accomplish this timing, the orbiter will be launched on a trajectory which will take it more than 180° around the solar system in 8 months. The probes vehicle trajectory will be a direct path from Earth to Venus needing four months. Launch vehicle will be the Atlas-Centaur.

The orbiter carrying 43 kg.(95 labs) of instruments is designed to study the Venusian atmosphere over one 243 day period. The orbiter's orbit will be 200 km(125 miles, by 60,000 km (37,300,000 miles). The second spacecraft will carry four separate probes which will be released from the 'bus' about 20 days before penetration of the atmosphere. The probes will be targeted to different locations on the planet's surface and tracked during the 70 minute descent thru the atmosphere to give valuable information in winds and circulation patterns. The probes will not be designed to survive after impact. Three of the four probes are small, weighing 86 kg (189 labs) each including 2,7 kg (6 lbs) of scientific instruments designed to measure atmosphere pressure and temperature. The fourth probe is larger carrying about 28 kg (62 lbs) of instruments as part of its 291 kg (642 lbs) bulk. Its instruments are designed to provide details about the identity of components in the atmosphere.

In spite of the mission's ambitious scientific objectives, Pioneer/Venus has been carefully designed to be a low cost project. Much of the planned equipment has already been flown on previous missions, cutting the expense in areas of instrument design and testing. The heavy use of standardized subsystems will allow Pioneer/Venus engineers to eliminate much prototype testing. 70% of the hardware which will go into the main body of the probe carrying craft is identical with that of the orbiter. Pioneer/Venus mission is managed by NASA's Office of Space Science by Ames Research Center, Mountain View, CA. Spacecraft are built by Hughes Aircraft Co. El Segundo, CA.

Tracking and data acquisition for the two spacecraft will be provided by NASA Deep Space Network (DSN) operated by NASA's Jet Propulsion Lab. a subnet of deep space stations with 26 m (25 foot) diameter antenna systems and around the-world coverage will provide basic tracking support. The 64 m (210 foot) diameter antenna subnet will provide coverage during critical phases such as velocity corrections and Venus encounters.

I hope this gives you some insight into the Pioneer/Venus mission. Information for this article was taken from NASA Release #/76-53.

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Second Comings are nothing new among the bizarre cult-pioneers of the American West, but a sect of UFO freaks had carried their own brand of spaced-out theology and hip evangelism one step beyond the rest. Led by a dress-alike, middle-aged couple calling themselves Bo and Peep or "the space fetuses." At one meeting in Waldport, Oregon, they persuaded between fifteen and twenty people to leave possessions, home and even children behind and follow them somewhere into the parapsychological wilderness. Bo and Peep, preach that a spacecraft is even now hovering near a Nebraska encampment where more than 40 followers are in retreat. The flying saucer, they say, will eventually transport them to the "upper vibrational level."

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Scientists are arguing whether to keep or kill living things a spacecraft might bring back from Mars. One side wants to keep the living things for study-at any cost. The other side wants them destroyed for fear they might infect the earth.

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NASA has assigned project management responsibility for the first two Spacelab experiment payloads to the Maeshall Space Flight Center. The Spacelab 1 payload will be a joint NASA and European Space Agency endeavor; Spacelab 2 currently is solely a NASA undertaking.

Space Covers Reported & Received

WHITE SANDS MISSILE RANGE, NM

2-3-76 LAUNCH/STINGER NO. PQCT-1 VS MQM61A DRONE
2-24-76 AEROBEE 170 A04.305-1/USAF SOLAR FLUX EXP.
3-5-76 USAF AIR LAUNCHED/CRUISE MISSILE FTM-1
3-5-76 AEROBB 170 NASA 13.128/COMET WEST UV STUDY
3-5-76 AEROBEE 200 NASA 26.05C/COMET WEST-LYMAN-ALPHA
3-9-76 HAWK AIR DEFENSE NLA 1-7/VS. MQM61A DRONE
3-10-76 AEROBEE 170 NASA 13.12/COMET WEST UV SPECTRUM
3-19-76 AEROBEE 200 NASA 26.055/BRIGHT SEYFERT GALAXY
3-26-76 AEROBEE 200 NASA 26.017/
3-30-76 ASTROBEE F NASA 25.013/SOLAR CORONA STUDY
3-31-76 HAWK AIR DEFENSE MISSILE/LA9-3 VS. MQM61A DRONE
4-9-76 LANCE MISSILE NO 2160
4-15-76 NAVY SM2 NO. FTR-11/VS MQM 34D DRONE
4-20-76 ALCM CAPTIVE FLIGHT/FTM-3 B52 CARRIER
4-21-76 AEROBEE 200 NASA 26.049/GALACTIC CENTER SCAN
4-23-76 ARCAS PARCHUTE
4-27-76 USAF SRAM 72/LAUNCHED FROM B52
4-27-76 SRAM USAF 73/LAUNCHED FROM B52
4-28-76 USAF ALCM FTM NO 3/CAPTIVE FLIGHT TEST/CANCELLED
5-4-76 PERSHING P1A ARTILLERY MISSILE A/0/164
5-4-76 PERSHING P1A ARTILLERY MISSILE A/0/165
5-11-76 AEROBEE 200 NASA NO. 26.045 TO/MEASURE TEMPERATURE OF THE QUIET
5-12-76 ASTROBEE D NASA NO 23.006
5-12-76 BLACK BRANT VC - SPAR - NASA/NO 21.033/HORIZONTAL CHECK
5-13-76 BLACK BRANT VC - SPAR - NASA/NO 21.033/VERTICAL CHECK
5-17-76 NAVY LAUNCHED BLACK BRANT VC/NASA NO. 21.033.SPAR ZERO/GRAVITY TEST
5-18-76 AIR LAUNCHED CRUISE MISSILE/FTM 3. 33-MINUTES FLIGHT LAUNCHED FROM B-52
5-18-76 AEROBEE 150 AFAD 3.410.1/MEASURE SOLAR ULTRAVIOLET INTENSITY
5-18-76 PERSHING P1A ARTILLERY MISSILE/A/0 166 FIRED FROM McGREGER RANGE TO WSMR
5-18-76 PERSHING P1A ARTILLERY MISSILE/A/0 167 FIRED FROM McGREGOR RANGE TO WSMR

WALLOPS ISLAND, VA (Wallops Flight Center)

3-9-76 TATER VEHICLE/D3-8193/8 03 AM MAR 9 1976
3-19-76 NIKE-CAJUN/T2-8019/2 15 PM MAR 19 1976
3-29-76 TATER VEHICLE/D3-8195/5 58 PM MAR 27 1976
4-2-76 ATHENA MSV/D4-7871/4 18 PM APR 2 1976
4-21-76 VIPER-DART/T1-8278/1 33 PM APR 21 1976
4-22-76 VIPER-DART/T1-8279/10 30 AM APR 22 1976
4-26-76 TATER VEHICLE/D3-8194/4 47 PM APR 25 1976

CHATANIKA, AK (Poker Flat Rocket Site)

None Reported

VANDENBERG AFB, CA (Western Test Range)

1-23-76 LAUNCH/MINUTEMAN 1
2-18-76 SATELLITE/LIFTED INTO/EARTH ORBIT/SECRET PAYLOAD/THOR-DELTA/BOOSTER
2-19-76 US AIR FORCE MINUTEMAN 2
2-24-76 MINUTEMAN 2/LAUNCHED BY/STRATEGIC AIR COMMAND/AIRBORNE LAUNCH CREW
2-27-76 US AIR FORCE/ICBM/IN SUPPORT OF/TRIDENT DEVELOPMENT
3-4-76 MINUTEMAN-3/LAUNCHED BY/SAC/AIRBORNE/LAUNCH CREW
3-15-76 SUCCESSFUL/MINUTEMAN-3/PRODUCTION/VERIFICATION/TEST

3-22-76 DEFENSE/METEOROLOGICAL/SATELLITE/USAF TITAN 3/BOOSTER
4-30-76 LAUNCH/DATA GATHERING MISSION/UNSCHEDULED/SATELLITE
5-4-76 LAUNCH LAGEOS/pmk Vandenberg AFB CA;Fairbanks AK(ULA);Greenbelt MD(GSC); Quito Ecuador(QUI);Ascot Berk(WNK);Vandenberg AFN CA(A-3)
5-5-76 BOMARC TARGET/MISSILE DESTROYED BY AIR T. AIR/OR GROUND TO AIR MISSILE

PALESTINE, TX (Balloon Site)

3-31-76 INTERFAROMETER SYSTEM TO MEASURE THE/SPECTRUM OF BACKGROUND RADIATION
5-2-76 MEASURE TRACE GASES. TO DETERMINE THE IMPACT OF SST EFFLUENTS/6:55 AM
5-2-76 TO OBSERVE EXTRASOLAR/X-RAY SOURCES/7:37 PM
5-10-76 HARD X-RAY ASTROMONY OBSERVATORY

EDWARDS, CA (Dryden Flight Research Center)

10-16-75 YF-12 SUPERSONIC FLIGHT 53/CREW DON MALLOCK, RAY YOUND
10-17-75 F-15 R.P.R.V./20-30/CREW TOM MCMURTRY, JOHN MANKE
11-5-75 F-15 R.P.R.V./A-31/AIR ABORT, INSTRUMENT PROBLEMS
11-6-75 F-15 R.P.R.V./A-31/AIR ABORT, INSTRUMENT PROBLEMS
11-6-75 F-111 SUPER CRITICAL WING/15/CREW:CAPT RON GRABE, EINAR ENEVOLDSON
11-7-75 F-111 SUPER CRITICAL WING/83/CREW:CAPT RON GRABE, EINAR ENEVOLDSON
11-7-75 F-15 R.P.R.V./A-32/AIR ABORT,TV PROBLEMS
11-10-75 F-111 SUPER CRITICAL WING FLIGHT 16/CREW:EINAR ENEVOLDSON, CAPT RON GRABE
11-13-75 F-15 R.P.R.V./34-47/CREW:EINAR ENOVOLDSON
11-14-75 F-15 R.P.R.V./21-34/CREW: JOHN MANKE, TOM MCMURTRY
11-17-75 F-111 SUPER CRITICAL WING FLIGHT 17/CREW:CAPT RON GRABE, EINAR ENEVOLDSON
1-16-76 YF-12 (no details)
1-20-76 FERRY FLIGHT TO/LOS ANGELES FOR/AIRCRAFT MAINTENANCE/FUTURE SPACE/SHUTTLE
1-23-76 FERRY FLIGHT FROM/LOS ANGELES BACK/TO EDWARDS AFB/FUTURE SPACE/SHUTTLE
1-27-76 YF-12 (no details)
2-5-76 YF-12 (NASA Flight Research Center Cachet)
2-18-76 NASA's 747/CONTINUES WAKE/VORTEX STUDY/STUDY SPACE/SHUTTLE FERRY
3-4-76 YF-12 (no details)
3-23-76 YF-12 (no details)
4-2-76 YF-16 (no details)
Some covers on X-24B, B-1, F-15, YF-16 have been flown

KENNEDY SPACE CENTER, FL (eastern Test Range)

12-14-75 LAUNCH/CLASSIFIED PAYLOAD, USAF TITAN III-C/12:15AM
2-19-76 LAUNCH MARISAT-A/pmk KSC,Astronaut Trail Sta,KSC Orlando;Greenbelt MD(GSC); Waimea HI(HAW);Agana Guam(GWM);St George & US NAVY 10958BR Bermuda(BDA); Oxard CA(Santa Paula Comsat);Bridgeport CT(Southbury Comsat)
3-10-76 LAUNCH/HASPA 2 (Abort)
3-15-76 LAUNCH SOLRAD/pmk KSC,Cape Canaveral;Greenbelt MD (GSC);Fairbanks AK(ULA); St George & US NAVY 10958BR Bermuda(BDA);Lompac CA(USCG Lorsta);Cape Canaveral, FL (NRL)
3-26-76 LAUNCH RCA-B/pmk KSC Orlando,Astronaut Trail Station;Greenbelt MD(GSC); St George,Bermuda(BDA)
4-22-76 LAUNCH NATO-C/pmk KSC Orlando,Astonaut Trail Station,KSC(MIL);Agana Guam (GWM);Greenbelt MD(GSC);Ascension(ASC);St George Bermuda(BDA)
5-13-76 LAUNCH COMSTAR-A/pmk KSC Orlando, KSC(MIL);St David's Bermuda(BDA)Ascension (ASC);Greenbelt MD(GSC);(Nice Cachet,Poor Postmark)(AGO)

KOUROU, FRENCH GUYANE (CNES)

It is reported this facility is not making space launches, but covers have been received in April and May 1976. Listed are covers not reported in 1975 and balloon launches.

9-4-75 BALLOONS CAPTIFS
9-5-75 BALLOONS AUTRES
9-8-75 BALLOONS AUTRES
9-9-75 SUPER ARCAS 35/81

9-10-75 BALLOON AUTRES
9-13-75 BALLOON AUTRES
9-14-75 BALLOON NCAR
9-15-75 BALLON AUTRES
9-17-75 SUPER ARCAS 35/81
9-18-75 BALLOON NCAR
9-29-75 SUPER ARCAS 35/82
10-2-75 BALLOON AUTRES
10-3-75 LAUNCH/CARRIER BALLOONS SYSTEM,NCAR 1975
10-7-75 BALLOON NCAR
10-7-75 BALLOON AUTRES
10-8-75 BALLOON AUTRES
10-10-75 BALLOON AUTRES
10-12-75 BALLOON NCAR
10-16-75 BALLOON NCAR
10-16-75 LAUNCH/THERMAL BALLOON KOUROU 1975
10-22-75 BALLOON NCAR
10-24-75 BALLOON AUTRES
10-26-75 BALLOON CAPTIFS
10-27-75 LAUNCH/BALLOONS IASB,CNES,CNRS,COVOS,ONERA
10-28-75 BALLOON AUTRES
10-29-75 BALLOON AUTRES
10-29-75 LAUNCH/SUPER ARCAS 35/83
10-30-75 BALLOON NCAR
11-5-75 BALLOON NCAR
11-6-75 BALLOON NCAR
12-18-75 SUPER ARCAS 35/84
4-29-76 SUPER ARCAS 35/91
5-12-76 SUPER ARCAS 35/92

KIRURA, SWEDEN (ESRO)

3-30-76 LAUNCH ANES

ANDOYA, NORWAY (Andoya Rocket Range)

None Reported

CHURCHILL RESEARCH RANGE

3-23-76 LAUNCH (anyOne have suggestions how we can find what flight)
4-27-76 LAUNCH

TANEGASHIMA SPACE CENTER, JAPAN

2-29-76 LAUNCH/ISS/pmk in Japanese Kagoshima Japan

HOLLOMAN AFB, NM

12-18-75 TEST/SAMPLING OF MATERIAL AT MACH 5 FOR SPACE RE-ENTRY VEHICLE
1-13-76 TESTING/HI TECH
1-14-76 TESTING/J-35 ESCAPE SYSTEM
1-19-76 TESTING/HYPER TECH
1-27-76 TESTING/DRAG CHUTE
1-28-76 TESTING/LASER ATTITUDE REFERENCE SYSTEMS
1-29-76 TESTING/J-35 ESCAPE SYSTEM
2-4-76 ARMY PLUME STUDY/TEST OF DRAG CHUTE AT MACH 1.7
2-5-76 ARMY PLUME STUDY/TEST OF DRAG CHUTE AT MACH 1.7
2-13-76 LASER ATTITUDE REFERENCE SYSTEM/TEST ENVIRONMENTAL CHECKOUT OF LASER RING
2-20-76 J-35 ESCAPE SYSTEM/TEST SWEDISH ATTACH FIGHTER AT MACH 1
2-26-76 J-35 ESCAPE SYSTEM/TEST SWEDISH ATTACH FIGHTER AT MACH 1
3-26-76 TEST/PROJECT ARROWHEAD
3-29-76 TEST/HIGH ALTITUDE SUPERSONIC TARGET

4-2-76 LARS TEST
4-6-76 FRANKFORD ARSENAL TEST
4-14-76 TRANSONIC PRESSURE MODEL
4-15-76 LARS TEST
4-16-76 F-5E/F ESCAPE SYSTEM
4-30-76 F-5E/F ESCAPE SYSTEM

SPECIAL EVENTS/POSTMARKS/CACHETS

1-1-76 VIKING TO MARS/JPL cacheted cover honoring mission/pmk Pasadena, CA
2-6,7,8,-76 ASDA/HONORING APOLLO 11 & HONORING COPERNICUS/pmk Chicago, IL
3-2-76 USNS Vanguard with GEOS-C ship cachet/pmk Orlando, FL
3-3-76 ANNIVERSARY/APOLLO 9/7th/pmk KSC
3-14-76 P74-1 TITAN 3C/AIR FORCE LAUNCH/pmk Cape Canaveral, FL
3-16-76 ANNIVERSARY/GEMINI 8/10th/pmk KSC
3-16-76 FIFTIETH ANNIVERSARY/WORLDS FORST LIQUID/PROPELLANT ROCKET/pmk Auburn, MA
3-17-76 TENTH ANNIVERSARY/GEMINI 8/pmk Cape Canaveral, FL
3-19-76 SEVENTH/LUNAR SCIENCE CONFERENCE/pmk Houston, TX
3-20-76 50th ANNIVERSARY(w/rocket)/pmk FRESPEC STATION FRESNO CA
3-23-76 ANNIVERSARY/GEMINI 3/11th/pmk KSC
3-27-76 OPENING/US NAVY TRIDENT SUBMARINE TEST & SUPPORT COMPLEX/pmk Cape Canaveral
3-29-76 HELIOS-B/NEAREST THE SUN/pmk Koln, W. Germany
3-30-76 HELIOS-B/NEAREST THE SUN/pmk Weilheim, W.Germany
4-1-76 HELIOS-B/NEAREST THE SUN/pmk Bad Munstereifel Effelsberg, W. Germany
4-1-76 WERABA '76(Space Picture Cancel for USA,UN,USSR and Switzerland)
4-4-76 Picture cancel of rocket & flag/pmk PARFIREX STATION PARK FOREST IL
4-11-76 APOLLO 13/6th ANNIVERSARY/pmk Cape Canaveral & Astronaut Trail Station
4-16-76 APOLLO 16/4th ANNIVERSARY/pmk KSC & Astronaut Trail Station
4-17-76 HELIOS-B TEST/pmk Wesseling Oberbay W. Germany
4-21-76 HUB OF THE UNIVERSE/CELEBRATES 110+5 MAY 29,30,31 1976/pmk Boswell, IN
4-14-76 FMF LOCAL POST SALUTES/EXPLORERS OF SPACE/DR TOMAS A. TERRY/pmk Picture can.
5-1-76 Space picture cancel/MIDWEST POSTAGE STAMP & COIN SHOW/pmk Chicago, IL
5-5-76 FREEDOM 7 15th ANNIVERSARY/pmk KSC
5-14-76 ANNIVERSARY SKYLAB 1/pmk Kennedy Space Center, FL
5-14-76 Pictural Cancel/Minuteman & Astronaut/pmk POSTEX ARLINGTON TX

SPACE SHUTTLE TESTS

This is a new listing and would appreciate comments if these should be listed in date order or each facility listed together in order. Due to a slip up a couple are listed with Edwards CA.

11-24-75 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
11-25-75 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
11-26-75 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
11-28-75 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
1-6-76 SPACE SHUTTLE ORBITER/CREW MODULE MATED TO FUSELAGE ASSEMBLY/pmk Palda CA
2-13-76 GRUMMAN GULFSTREAM 11/SPACE SHUTTLE CREW TRAINER/pmk Calverton NY
2-20-76 SPACE SHUTTLE/WIND TUNNEL TEST/pmk Moffett Field CA
3-1-76 DELIVERY/BAY DOORS/SPACE SHUTTLE ORBITER 101/pmk Palmdale CA
3-25-76 SPACE SHUTTLE/WIND TUNNEL TEST/pmk Moffett Field CA
3-26-76 SPACE SHUTTLE/WIND TUNNEL TEST/pmk Moffett Field CA
4-6-76 SPACE SHUTTLE MAIN ENGINE TEST #047 ENGINE 001/pmk Gulfport MS
4-8-76 SPACE SHUTTLE MAIN ENGINE TEST #048 ENGINE 001/pmk Gulfport MS
4-12-76 SPACE SHUTTLE MAIN ENGINE TEST #049 ENGINE 001/pmk Gulfport MS
4-20-76 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
4-21-76 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
4-21-76 SPACE SHUTTLE MAIN ENGINE TEST #002 ENGINE 002/pmk Bay St Louis MS
4-22-76 SPACE SHUTTLE MAIN ENGINE TEST #50 ENGINE 001/pmk Bat St Louis MS
4-22-76 SPACE SHUTTLE MAIN ENGINE TEST #52 ENGINE 001/pmk Bay St Louis MS
4-26-76 SPACE SHUTTLE MAIN ENGINE TEST #003 ENGINE 002/pmk Bay St Louis MS
4-27-76 SPACE SHUTTLE MAIN ENGINE TEST #004 ENGINE 002/pmk Bay St Louis MS

4-28-76 SPACE SHUTTLE MAIN ENGINE TEST #52/ENGINE 001/pmk Bay St Louis MS
4-30-76 SPACE SHUTTLE MAIN ENGINE TEST #005/ENGINE 002/pmk Bay St Louis MS
5-3-76 SPACE SHUTTLE MAIN ENGINE TEST #006 ENGINE 002/pmk Bay St Louis MS
5-5-76 SPACE SHUTTLE MAIN ENGINE TEST #007 ENGINE 002/pmk Bay St Louis MS
5-5-76 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
5-6-76 WIND TUNNEL TEST/SPACE SHUTTLE/pmk Moffett Field CA
5-10-76 SPACE SHUTTLE MAIN ENGINE TEST #53 ENGINE 001/pmk Bay St Louis MS
5-11-76 SPACE SHUTTLE MAIN ENGINE TEST #54 ENGINE 001/pmk Bay St Louis MS
5-18-76 SPACE SHUTTLE FIRST MAINSTAGE TEST ENGINE 002/pmk Bay St Louis MS
5-19-76 SPACE SHUTTLE MAIN ENGINE TEST #55 ENGINE 001/pmk Bay St Louis MS

At times late reports are received of facilities servicing covers for space flights. At this time is such a report and sine some facilities service for the same event but different dates, only one date is reported.

6-12-75 NIMBUS-F/pmk Waimea,HI(HAW S-13)
6-20-75 OSO-I/pmk Madrid (MAD S-105)
8-20-75 VIKING-A/pmk Grand Turk(E-101 8-11-75);USPS VA 236(Langley);Greenbelt MD (GSC C-1);Canberra City Australia(C-102);Curth Australia(D-100 DSS-42); Curth Australia(D-101 DSS-43);Tharwa Australia(D-102 DSS-44)
8-26-75 SYMPHONIE-B/pmk Cape Canaveral FL (A-2)
9-9-75 VIKING-B/pmk KSC(MIL S-10)(A-2);USPS VA 236(Langley);Barstow CA(D-2,D-3, D-4,D-5);Canberra Australia(D-100,D-101 TID);Tharwa Australia(HSK D-102); Freeport Bahama(E-100);Grand Turk(E-101);Ascension (E-103)
9-26-75 INTELSAT-IV-A/pmk Kenmare South Africa(S-107)
10-6-75 AE-D/pmk Vandenberg AFB CA
1-15-76 HELIOS-B/pmk Madrid Spain(C-101;Canberra City Australia(C-102);Barstow CA (GDS D-2,D-3,D-4,D-5);Tharwa Australia(TID D-100,D-101);Madrid Spain(MAD D-105,D-106,D-107);Ascension(ACN S-100);USPS FL 327(Redstone);Utjpoki Finland(GF-2)
1-19-76 CTS/pmk Fort Churchill Canada
1-30-76 INTELSAT-IVA-A/pmk Greenbelt MD (GSC C-1)

Since the Apollo-Soyuz Test Project is almost a year old this will be the last report of covers, except if covers are received from the tracking ships of the Soviet Union.

NO	STATION	CANCEL	DATE	NO	STATION	CANCEL	DATE
C-3	Headquarters	Washington	15	O-102	Spain	US Navy	15
C-25	Kirtland	Houston TX	17	O-104	Ethiopia	Addis Ababa	15
C-193	Gabon	DNS		R-7	Loring	Eglin AFB FL	15
D-100	DSS-42	Torrens	15	W-5	Suitland	Washington DC	17
D-101	DSS-43	Torrens	15	W-10	Sunnyvale	Aguadilla PR	15
D-102	DSS-44	Torrens	15		SAMTEC	Cachet on back of filler	

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Mentioned on page 20 of the March issue about the 10-foot wide mirror cracking at Kitt Peak National Observatory. An agreement has now been reached with Owens-Illinois and NASA. Owen-Illinois will furnish a replacement disc for $200,000 and the return of the damaged disc.

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The Los Alamos Scientific Laboratory in New Mexico has begun testing a model of a nuclear reactor. The reactor would use a gaseous rather than a solid nuclear fuel.

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The Soviet Union has ackowledged the existence of the long secret city of Leninsk site of the Baikonur space-launching complex in Central Asia. The name of the city which does not appear on Soviet maps or reference books was mentioned in a brief dispatch on the construction of electric power transmission lines. American astronauts who were permitted to visit the Soviet space complex reported that a city of about 50,000 population known as Leninsk was associated with the launching complex. Previously the locality had been identified by American space experts as Tyuaratam, for the name of the local rail station while the Russians called it Bailonur for sheep farm about 200 miles away.

FOR THE AUTOGRAPH COLLECTOR by John J. Macco

RCA-B launched March 26, 1975 Delta 121 launch vehicle
Goddard Space Flight Center, Greenbelt, MD 20771
Robert Goss-Project Manager
Kennedy Space Center, Fla 32899
Hugh Weston Jr-Delta launch Operations Manager; B.L. Grenville-Delta Test Operations Manager; David Bragdon-Spacecraft Coordinator

NATO 3 A launched Apr 22, 1976 Delta 122 launch vehicle
Goddard Spacflight Center, Greenbelt MD 20771
Robert Goss-Project Manager
Kennedy Space Center, Fla 32899
Hugh Weston Jr-Delta launch Operations Manager; Wayne McCall-Delta Operations Chief Engineer; John J. Dunn-Spacecraft Coordinator

The following were submitted by Seam Marsar, and listed is the type of flight and part played in each, person taking part and address.

X-20 Dyna-Soar Pilot
James A. Wood, Colonel USAF
Commander Test Operations
Edwards AFB, CA 93523

X-15 Pilot
Forrest Silas Petersen, Rear Admiral
Vice Chief of Naval Material
U.S. Navy Dept
Washington, DC

X-15 & X-20 Dyna-Soar Pilot
Milton O. Thompson
Director of Research Project
NASA Flight Research Center
Edwards AFB, CA 93523

X-20 Dyna-Soar/X-15 Pilot
William "Pete" Knight, Colonel
ASD/SD4
Wright Paterson AFB, Ohio

X-15 Pilot
General Robert A. Rushworth
Commander A.F.F.T.C.
Edwards AFB, CA 93523

M.O.L. Astronaut
Robert Tralles Herres, Colonel
449th Bomb Wing
Kincheloe AFB, Mich.

The following was received from John Macco at press time.

LAGEOS launched May 4, 1976 Delta 123 launch vehicle
NASA Headquarters Washington, DC 20546
Robert L. Spencer-LAGEOS Program Manager
Marshall Space Flight Center, Huntsville, Ala 35801
Charles W. Johnson-Project Manager; Lewis L. McNair-Chief Engineer

COMSTAR I-A launched May 13, 1976 Atlas Centaur launch vehicle
Lewis Research Center, Cleaveland, OH 44101
Kenneth A. Adams-COMSTAR I Mission Project Engineer
Kennedy Space Center, Fla 32899
James N. McKnight-Project Engineee

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NASA has awarded a letter contract to the Singer Company, Simulation Products Division, Binghamton, NY for development of a Shuttle mission simulator for use as a trainer for the Space Shuttle Orbiter vehicle crew and flight controllers. The simulator is to be delivered to the Johnson Space Center in March 1978.

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Jet Propulsion Laboratory information officer Alan Wood said both Viking spacecraft were in excellent condition for the task ahead.

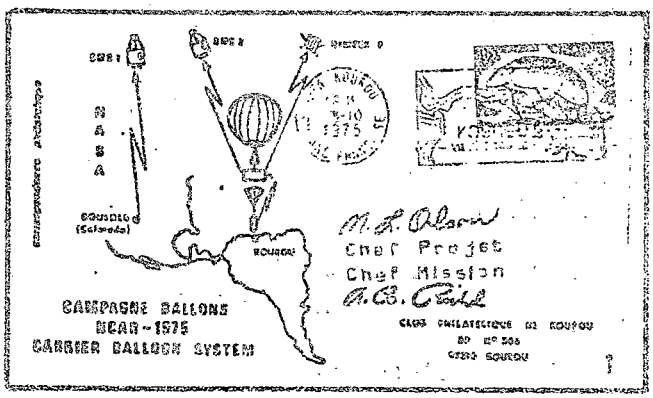
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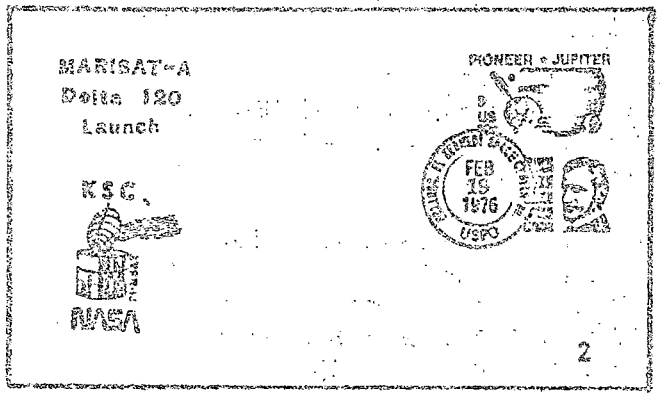
Officials at Johnson Space Center have selected the astronauts for the first Space Shuttle test. They are Fred Haise of the aborted Apollo 13 mission and Charles Fullerton who has never flown in space.

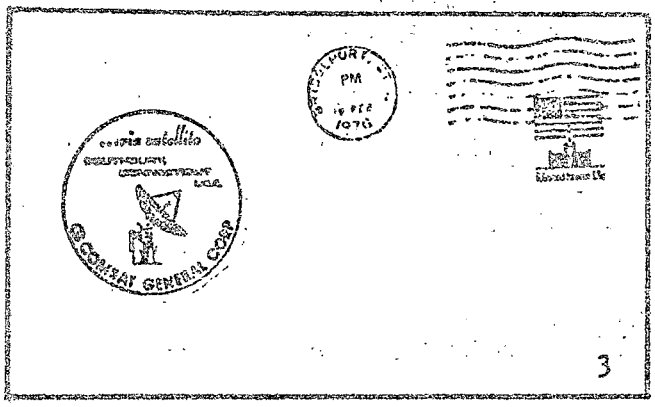
Cachets

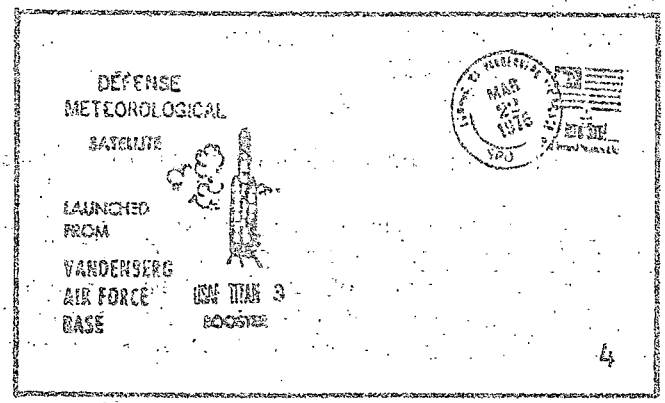
On this and the following pages are covers with cachets. If not stated the cachet and postmark are in black. Listed is person or servicer if not your own.

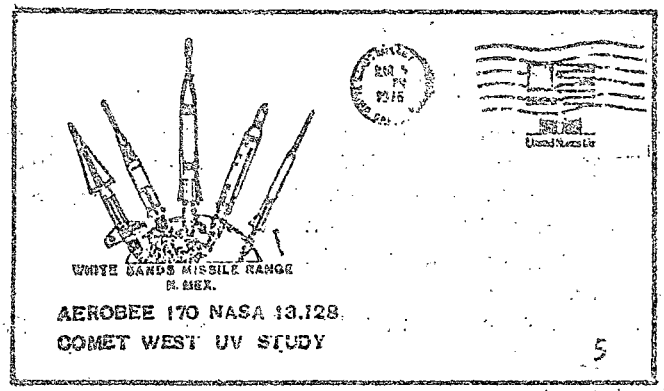
(1) this is a printed cover from the Club Philateliqe De Kourou, BP No 306, 97310 Kourou, Guyane Francaise. This autographed by the Project Chief and Mission Chief. This is for a balloon launch and had something to do with SMS-1, SMS-2 and Nimbus F. (2) This is for the MARISAT-A launch and serviced by Ken Havekotte, cachet is top words in blus and bottom in red. (3) This is for the MARISAT-A and from the Southbury, Connecticut station. (4) This is for a Defense Meteorological Satellite launch with cachet in blue and postmark in red, serviced by Vandy Covers. (5) (6) are for launches from White Sands Missile Range. The cachet is in red with words at the bottom in black, cover serviced by Michael Lovelady.

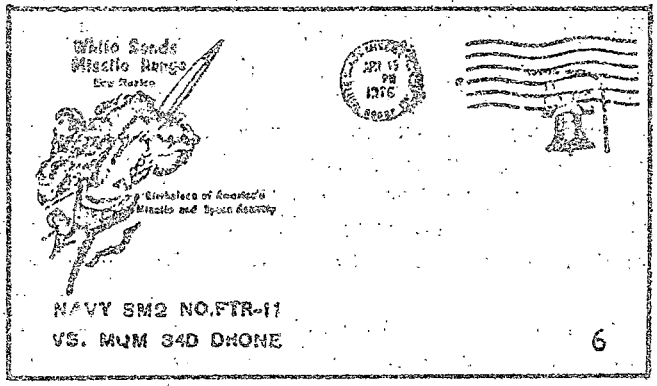




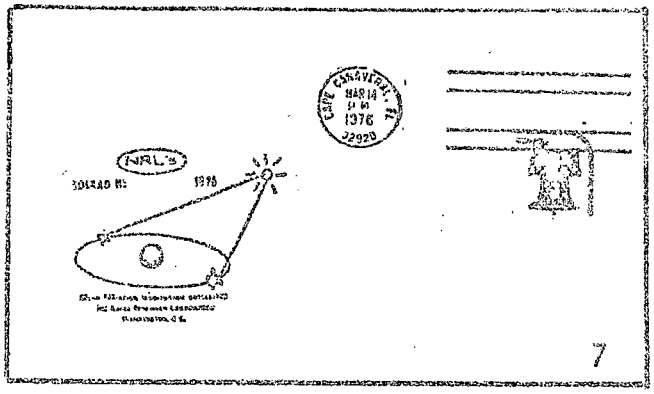




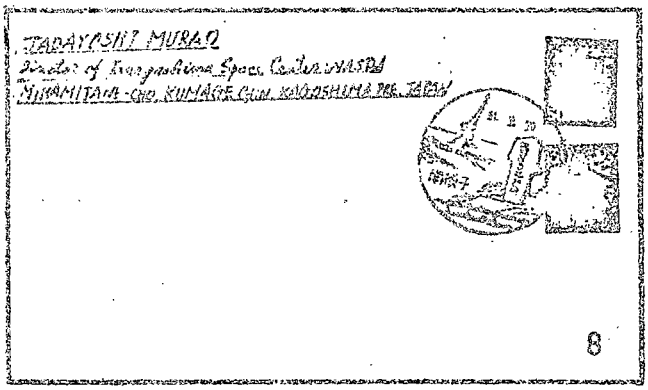




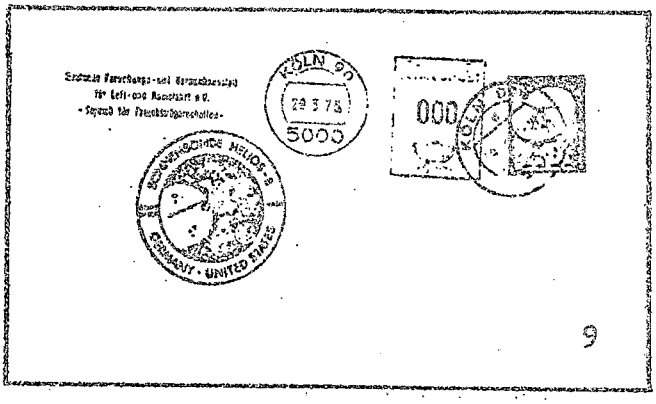
(7) for the SOLRAD flight,cover sent to Naval Research Laboratory, cachet in blue, (8) ISS launch at Tanegashima Japan, postmark in red,(9) HELIOS-B closest to the Sun with blue cachet and red meter postmark from Koln West Germany,(10) Space Shuttle mated cover from Bande Covers. Top of cachet is black and lower is red,(11) Space Shuttle Wind Tunnel Test with cachet in blue and postmark in red,(12),(13),(14) are space postmarks from Exhibitions in Detroit, Fresno and Park Forest.



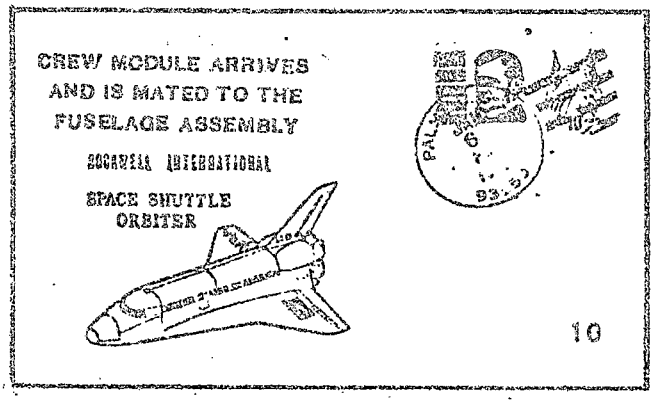
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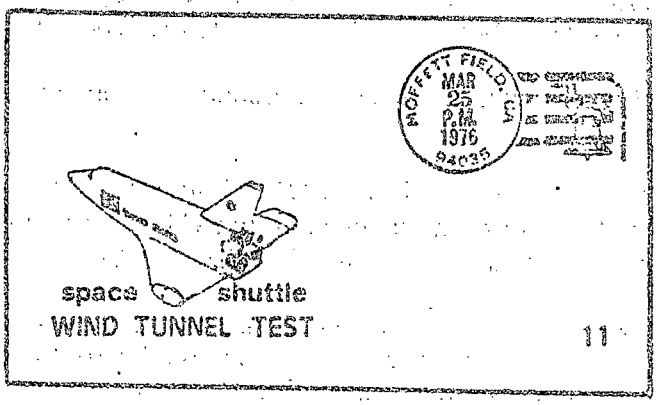
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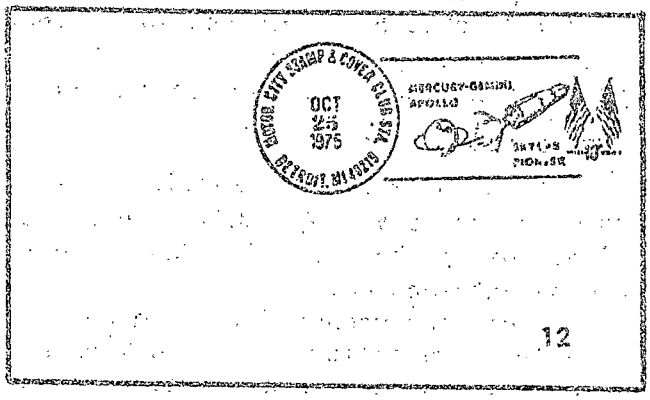
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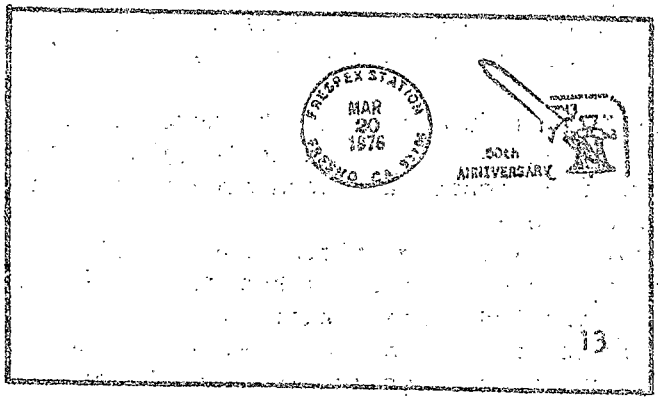
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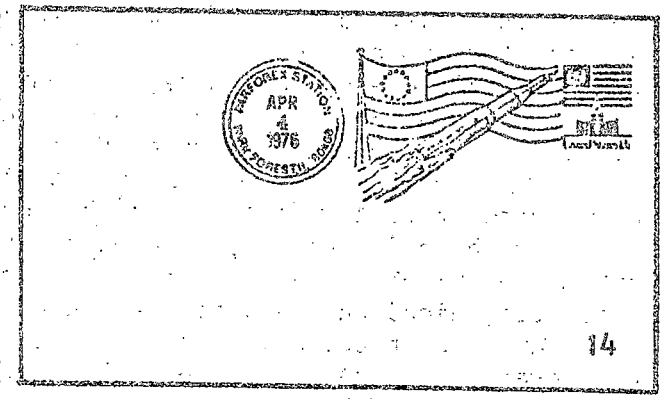
11



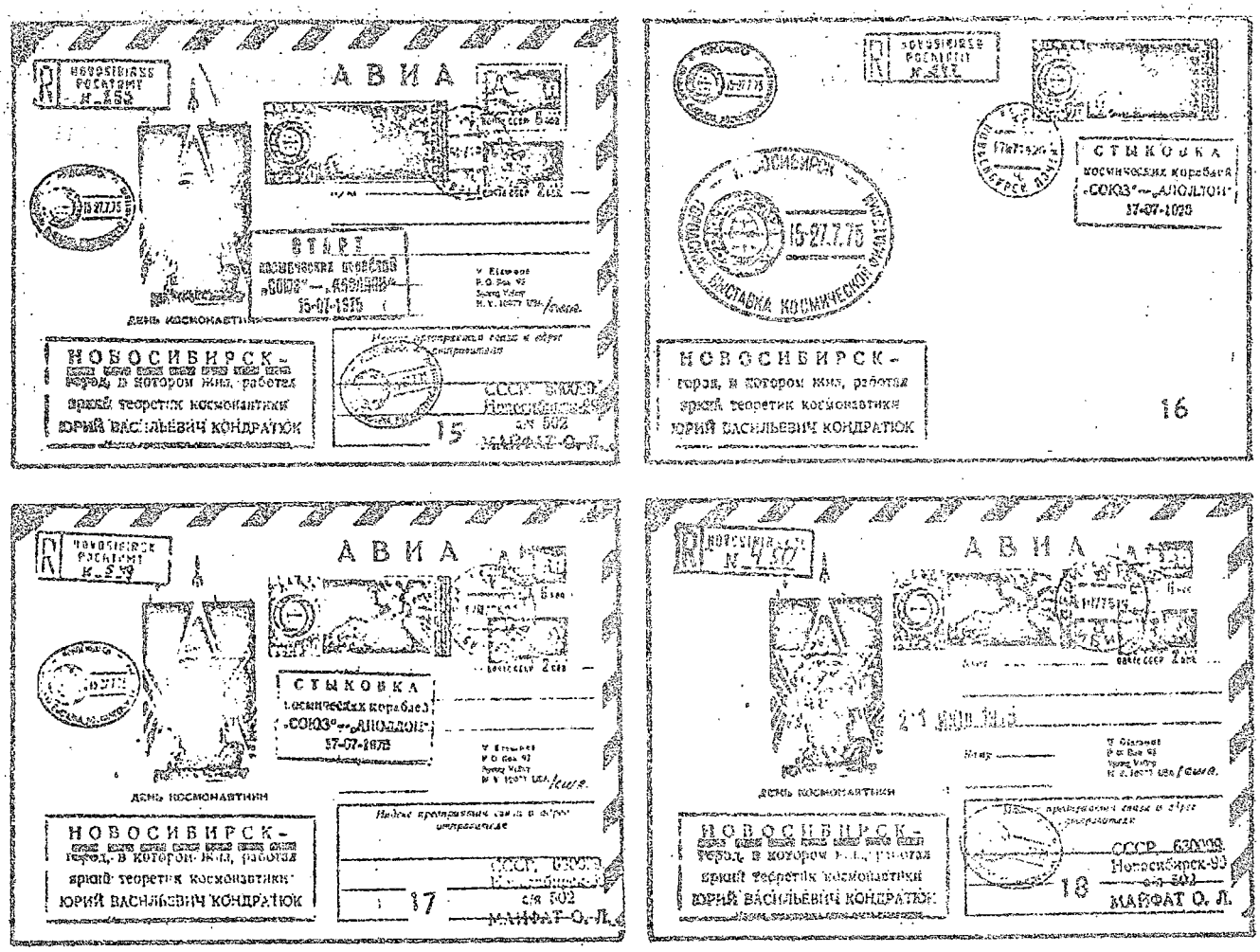
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14



For these covers the translation from Russian into English didnot come through and will explain what each is serviced for. (15)is for the launch of the Soyuz, and (16)(17) for the Docking and other events taking place on July 17, 1975. The (18) is for the landing of Soyuz.

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THE SIBERIAN CONNECTION-1908 EXPLOSION CONTROVERSY by Tim Cash

As many space watchers will know, there was an explosion of enormous magnitude in Russian Siberia on June 30, 1908. There have been many Hypotheses expounded to explain the enormity of such an explosion.

The most controversial of the explanations claims that a mini-black hole penetrated the Earth's atmosphere and caused the explosion. This would have created a shock wave in the bow of black hole entry like the sonic boom created by a jet plane going faster than Mach 1. No such shock wave could have accounted for the gradual lowering of air pressure as measured in England, but should have created a dramatic reduction. As well as this objection to the black hole theory, there is another good reason why this theory is losing credance with scientists. There have never been any sightings of evidence of any black holes in the solar system. I received the latest astronomical theories on black holes from Dr. Paul Gorenstein at a Notre Dame lecture this spring. Dr. Gorenstein showed the latest observations as well as theories to explain them in the lecture. Some of the latest astronomical theories say that black holes are rarer than previously thought due to gravitational limits.

The matter-anti matter theory for the explosion is also not given much credance anymore because of the special conditions that must be present to allow antimatter to exist. Therefore, the only valid theory left to explain the explosion is that of a comet striking the Earth which is supported by evidence. The latest piece of evidence was a rock found in the area of the explosion in Siberia. The rock was analyzed and was very similar to elements found in meteorites and cometary observations made by NASA of Comet Kohoutek in 1973. Thus, in all probability, a Comet striking the atmosphere made the Siberian Connection.

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LATE INFORMATION

A soil sample from MARS, (PA) that is. Actual soil from the town with the unique name has been encased in plastic and mounted to a post card with a space for mailing address and is being offered to the public for a dollar plus a 13¢ stamp. All requests should be sent to Mars Area Chamber of Commerce, P.O. Box 532, Mars, PA 16046. In conjunction with the landing of Viking A and the commemorating of our nation's 200th birthday, a five-day celebration is being planned beginning July 1 and ending July 5.

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The two Vikings on the way to Mars have been traveling at approximately 73,000 miles per hours and things are good. It takes approximately 30 minutes for a roundtrip communications with the spacecraft and stations on earth.

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Covers sent to A-2, 645 Radar Sqd (SAGE)(ADC) Patrick AFB for the MARISAT-B, were returned to sender. Does anyone have information on why these were returned unopened.

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Report on covers from Santa Paula station being canceled at Oxard, is the main distribution center of the USPS for this district.

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