



SPACE *Log*

November 1965 ©

- November 1 -- The Soviet Union schedules a dual Pacific testing program to be conducted over the next two months.
- ✓ Representative Olin E. Teague's (D-Tex.) NASA Oversight Subcommittee is preparing the report, to be issued probably in January, on the state of advanced planning in the National Space Program.
- November 2 -- The Interim ComSat Committee, negotiating agent for the International Telecommunications Satellite Consortium that ComSat represents, endorses the **APOLLO**-support satellite system the Corporation is now establishing.
- ✓ Up from Baykonur-Karsakpay has gone the second 26,900-pound target station, **PROTON II**, in what could be the prelude to renewed manned activities by the Soviet Union.
 - ✓ **NORAD** is now tracking at least 60-odd (up to 150) objects from the second **TITAN III-C** shot. "Many factors" will be blamed for apparent Transtage explosion, including a malfunctioning engine valve that may have effected excessive tumbling.
 - ✓ "Rockets can be built to deliver any amount of cargo, mail, or passengers to any point on Earth from any other point," and the only major threat to implementing such commercial rocket systems is the competition from sub- and supersonic jet transports. These are the opinions of R. L. Johnson, director of Douglas' **MOL** subdivision.
- November 3 -- The Soviet-French communique issued at the departure of French Foreign Minister Maurice Couve de Murville from Moscow after six days of talks with Soviet leaders contained a message of a "desire" on the part of the two countries to reach an "appropriate agreement" in what **SPACE Daily** had earlier reported as a program for a joint communications satellite system.
- ✓ **NASA** adds still another month to the interval before the first **SURVEYOR** lunar landing attempt. After confirming the **SPACE Daily** reports of Sept. 24, Oct. 5 and 11 that the first attempt has moved from October to late in the year, to "as far away as February," the **NASA** lunar and planetary programs director, Oran W. Nicks now says the flight is expected "by March."
 - ✓ Using the **NASA** criteria for identifying its **SATURNS**, where a 1.5 million pound thrust increment represents a number designation, the booster which lofted **PROTON I** and **II** into orbit is at least a **SATURN II** and not quite a **SATURN III**--**SPACE Daily** report.
 - ✓ The Air Force is "now confident" that missile launch detection systems (the **MIDAS** program) "can be reliably and more effectively accomplished from satellites than by the use of earth-based systems alone."
 - ✓ **Martin-Marietta** and **Boeing** will perform the Contract Definition of the **SRAM** (Short-Range Attack Missile) program for the Air Force under \$2.75 million contracts.

- November 4 -- NASA has ruled that docking and extravehicular activity during the **GEMINI VII** and **VI** rendezvous mission are out due to a lack of time for providing the necessary equipment.
- ✓ NASA adopts a new phased project planning policy which will be used for all major research and development projects requiring "significant agency resources."
 - ✓ NASA-Cambridge awards a \$20,000 grant as a pilot study to the Massachusetts Department of Education to provide for the development of teaching aids and textual material for the teaching of space science to elementary and grade school children throughout the state.
- November 5 -- Dr. Harry Goett, onetime director of NASA-Goddard and former special assistant to NASA Administrator Webb, is appointed director of Advanced Technology for Plans and Programs at Philco's Western Development Labs in Palo Alto, Calif.
- ✓ French space officials have confirmed that the first attempt to launch the **A-1** technology satellite will be made late this month.
 - ✓ Dr. Harold Brown, Secretary of the Air Force, informs the Senate Space Committee that the **TITAN III-C** will be capable of meeting the Defense Department's space requirements well into the 1970s.
 - ✓ Dr. Robert C. Seamans, associate administrator of NASA, has submitted for the record his analysis that a manned mission to Mars "would, optimistically, perhaps be possible under optimum circumstances toward the latter part of this century."
 - ✓ NASA will negotiate with International Latex for a \$10 million development and production contract for the **APOLLO** flight suit, and with Hamilton-Standard of United Aircraft for a \$20 million development and production contract for the **APOLLO** portable life support system.
- November 8 -- The AFSC Aeronautical Systems Division awards Marquardt an \$11 million, two-year contract to design, develop, and fabricate a chemical propulsion system that can be used to flight demonstrate **CLAM** (Chemical Low-Altitude Missile) propulsion concepts.
- ✓ Aerojet's Solid Rocket plant at Sacramento is awarded a \$750,000 contract by the Air Force Rocket Propulsion Laboratory of Edwards AFB for the demonstration of the submerged cooled nozzle for large solid propellant booster systems.
 - ✓ The NASA office of Space Sciences and Applications has studied and NASA is devoting serious consideration to a manned Mars flyby in the mid-1970s. Identified by Dr. Homer E. Newell as one of "the options to be maintained," the flyby mission would be made with **APOLLO** hardware.
 - ✓ The Air Force, Aerospace Corporation, Lockheed and NASA concur that a hard start of the **AGENA** target vehicle's engine resulted in an explosion which destroyed the vehicle.
 - ✓ NASA-Ames selects Space-General for the study of the large orbiting antenna-satellite (deep space monitoring system) conceived by

- Ames' George Clemens and Alfred Mascy of the Mission Analysis Division.
- ✓ **GEODETIC EXPLORER XXIX**, the first NASA gravity gradient stabilized spacecraft, after two delays, was placed into a 692/1414-mile orbit Saturday, an apogee 412 miles higher than planned, by an Improved **TAT DELTA** rocket from NASA-Kennedy.
 - ✓ The Electronic Industries Association predicts that within the next five years the government market for electronics products will rise 36 per cent, while the total market will increase 40 per cent.
- November 9 -- Lockheed Missiles and Space is selected by NASA-Houston for an 8-month, \$35,000 study of the planning for the **APOLLO** manned Mapping/Survey (**AMS**) mission conceived as the initial phase of the **AA (APOLLO Applications)** program.
- ✓ NASA is investigating the feasibility of standardizing its basic **EXPLORER**-class satellites. At the request of OSSA, NASA-Goddard has been studying, in-house, ways of freezing shape, sizes, and weights of the family of spacecraft which has in the past been an individual design program for each flight.
 - ✓ NASA-Ames awards a \$200,000 nine-month study contract on the feasibility of the Hypersonic Transport (**HST**) to General Dynamics/Convair.
 - ✓ Jack S. Parker, GE vice president and group executive, is named chairman of the Electronics Corporations Division of the Clark University Robert Hutchings Goddard Library Program.
 - ✓ The boards of directors of McDonnell and Conductron Corp. informally approve an agreement which will result in McDonnell ownership of 80 per cent of Conductron's common stock.
- November 10 -- The FCC authorizes ComSat to procure from Hughes the four **BLUE BIRD** satellites for the Corporation's **APOLLO**-support synchronous system. The Commission's action covers both the procurement right and the actual contract with Hughes.
- ✓ In the near future NASA-Washington will issue requests for proposals for a Direct FM Broadcast Satellite. The study program will be funded from the \$800,000 remaining in FY '65 funds for this satellite, the Standardized **EXPLORER**, and the new **ATS-4** -- **SPACE** Daily report.
 - ✓ DOD requests the NASA and the Weather Bureau to participate with it in an experiment to determine the feasibility of establishing a synchronous weather satellite system capable of operational implementation by 1970.
 - ✓ A contract will be negotiated with the David Clark Company for the research and development of the astronaut flight suit for the crew of the Air Force Manned Orbiting Laboratory.
- November 12 -- Ling-Temco-Vought, developers of the Army **LANCE** surface-to-surface missile system, is contracted by the Naval Ordnance Test Station to adapt the **TERRIER** surface-to-air defense missile launch and launcher electronics to handle the **LANCE** in its planned role as BuWeps' shipboard "austere" missile.

- ✓ Resistojet and radioisotope rocket engine concepts have been selected for preliminary design development for the **MORL** (Manned Orbiting Research Laboratory). The selection was made by Douglas as part of the new, \$100,000 study it is doing for NASA-Langley on advanced engine systems for **MORL**.
- ✓ The first of six boilerplate models of the **SV-5D**, the developmental version of the Martin lifting space shuttle being developed for the AFSC Space Systems Division, has been completed and is now at Goodyear's Akron, Ohio, plant for compatibility check-outs with the body's recovery system.
- ✓ The Soviet Union launches its second officially known Venus probe with the flight of **VENUS II**, scheduled to fly by the planet late next February.
- ✓ **ATS-B**, the first synchronous-orbit, spin-stabilized Applications Technology Satellite (the **ATS-1** mission), to be launched about mid-1966, will carry a videcon-photomultiplier photographic experiment, the results of which could lead to a synchronous meteorological satellite system sometime before the end of this decade.
- ✓ Dr. Wernher von Braun, director of NASA-Marshall, has proposed a national post-**APOLLO** space program which is culminated with a one-way flight to Mars of 12 astronauts in 1984, to be picked up by another mission in 1986.
- ✓ Eight astronauts, six Air Force and two Navy pilots, have been named as the first contingent of a 20-man force which will be trained as **MOL** crew members.

November 15 -- A CNES (French space agency) official confirms for **SPACE Daily** that the Soviets offered during the recent space cooperation talks late last month, to launch a French satellite with a Soviet rocket.

November 16 -- The third official, and what is believed to be at least the fourth unofficial, attempt to gather data from a Venus probe is undertaken by the Soviet Union in a new launch from the Baykonur-Karsakpay complex. Identified as **VENUS III**, this latest experiment follows **VENUS II** by only four days and apparently was planned as a supplementary/back-up to **VENUS II**.

- ✓ Dr. Edward C. Welsh, executive secretary of the National Space Council, delivers a warning to "space planners" to stop sitting on nuclear propulsion concepts and to expedite development programs.
- ✓ Under a \$2.4 million contract extension from the Atomic Energy Commission, Martin-Baltimore will provide four (two pairs) **SNAP-19** radioisotope-fueled nuclear generators for the initial NASA-Goddard **NIMBUS B** weather satellite, which is scheduled for launch in 1967 to become **NIMBUS III**.

November 17 -- NASA's general manager, Dr. Robert C. Seamans Jr., confirms the agency's shift from its conservative mode of planning and scheduling to "plans for success" with the recognition that

- ✓ this may sometimes result in more spectacular failures.
 - ✓ Dr. Harold B. Finger, manager of the AEC-NASA Space Nuclear Propulsion Office, tells a conference at the Atomic Industrial Forum in Washington that lack of a firm go-ahead on nuclear rocket development is a "burden" in trying to maintain a good program.
 - ✓ The basic decision still has not been made whether to select an open or semi-open information policy for the **MOL** program or whether to follow in the footsteps of the **SAMOS** and **MIDAS** projects and bury it in military secrecy.
 - ✓ Some industry observers now feel that the first unofficial estimate of the cost of the five-mission **MOL** program at \$2 billion, may have been too conservative and that final costs may approach nearer to \$2.5 or \$3 billion. The official estimates still adhere to the figure of \$1.5 billion.
- November 18 -- The Senate Space Committee, whose post-**APOLLO** hearings ended on the day the **MOL** program was officially announced, will devote a selective portion of the annual NASA authorization hearings after the first of the year to possible duplication between the Air Force **MOL** (Manned Orbiting Laboratory) program and the **AA** (**APOLLO** Applications) program space station plans.
- ✓ Representative Joseph E. Karth (D-Minn.), chairman of the House Space Science Subcommittee, will return to Jet Propulsion Laboratory and Hughes Aircraft, the scene of a recent Subcommittee investigation of the troubled **SURVEYOR** program.
 - ✓ Harold Finger, manager of the AEC-NASA Space Nuclear Propulsion Office (**SNPO**), reports that **SNPO** has defined the **NERVA II** single engine nuclear engine system and a single propulsion module, which would be made up of a nuclear rocket and its associated propellant tankage.
- November 19 -- Northrop is asked to submit a proposal for a 12-month study program for the evaluation of the production deployment task for the **NIKE-X** anti-missile missile system.
- November 22 -- M. Marette, the French Ministre des Postes et Telecommunications, told President Charles de Gaulle during the latest Ministers' weekly meeting that everything was in readiness for the exchange of TV communications between Russia and France by way of one of the **MOLNIYA** communications satellites.
- ✓ NASA selects Lockheed Missiles & Space, McDonnell Aircraft, Martin-Denver, and Northrop Space Laboratories to perform separate and concurrent four-month design studies (Phase IA) on the Experiment Pallet for the **APOLLO** Service Module.
- November 23 -- The first flight of a lunar soft-landing **SURVEYOR**, a schedule which has in the last three months been stretched due to

- technical difficulties from October to late in the year to February to March, has now been moved by JPL to May.
- ✓ In a meeting with ABC and NBC, CBS secures the formal consensus to go ahead with its plans to provide, for multi-lateral distribution, live television coverage of the recovery operations of the sixth and seventh GEMINI missions.
 - ✓ On December 1, the FCC will rule that ABC's request for the right to own and operate a communications satellite is deficient in its supporting documentation and must be augmented with further clarification before the Commission can act on the application.
 - ✓ The 96th COSMOS is launched from the southern Baykonur complex at Tyuratam into a 51:54 degree, 140/192-mile orbit on a possible surveillance mission.
 - ✓ The following officers for the coming year were elected at the fall meeting of the board of governors of the Aerospace Industries Association: J. S. Parker, vice president and group executive, Aerospace and Defense Group of GE, elected chairman of the board, and Courtlandt S. Gross, chairman of the board of Lockheed, elected vice chairman. Karl G. Harr Jr. was reelected president, as were V. J. Adduci, as vice president, and Samuel L. Wright, as secretary-treasurer.
 - ✓ A newly formed engineering and manufacturing firm--42 Corporation--has been established by a California group headed by J. W. White, president of the company.
 - ✓ Col. John H. Glenn Jr., presently serving as an advisor to NASA and a member of the board of directors of Royal Crown, has been named an honorary chairman of the Robert Hutchings Goddard Library Program at Clark University. In another Library appointment, Dr. Raymond L. Bisplinghoff, special assistant to NASA Administrator Webb and a member of the board of directors of the AIAA, has been named chairman of the Program's Professional Societies Division.

November 24 -- NASA begins issuing requests for proposals for a Direct Broadcast Satellite (DBS) capable of transmission directly to conventional FM home radio sets and/or shortwave radios. The contracts to be awarded will specify a six-month detailed mission study of two alternatives: an HF band transmitter (DBS-HF); and an FM band transmitter (DBS-FM).

November 29 -- SPACE Daily believes the special Space Committee of the National Citizens' Commission of the White House Conference on International Cooperation has overlooked what might be one of the most promising and fruitful areas of international cooperation in space: a program to extend to the other countries an opportunity to participate physically in the manned space-flight program with the establishment of an international astronaut pool--SPACE Daily report.

- ✓ Maj. Gen. O. J. Ritland, deputy commander for space of the Air Force Systems Command, is awarded the NASA Exceptional Service Medal upon his retirement from the Air Force.

November 30 -- **EUROPA-1**, the first member of **ELDO's** launch vehicle stable may appear in an advanced version as well as in its initial (present) version if **ELDO** so decides next spring.

- ✓ Soviet engineers successfully complete the first color telecast from Moscow to Paris by way of the **MOLNIYA-1** communications satellite.
- ✓ The Committee on Arms Control and Disarmament of the National Citizens Committee on International Cooperation has recommended a three-year moratorium on the development of anti-missile missiles by both the United States and the Soviet Union.
- ✓ The initial member of France's satellite family has been unofficially dubbed **CITRON** (lemon) in keeping with the description of America's first satellite attempt (which failed), **VANGUARD**: grapefruit.

SPACE FLIGHT LOG

October 15 - November 30, 1965

Date	Flight	Designation	Program	Vehicle	Base	Perigee	Apogee	Inclination	Period	Decay	Duration
1) Oct. 15	Transtage	82A	US-AF	TITAN III-C	CK	432.76	505.92	32.36	100.0	10/15	*
2) 16	COSMOS 92	83A	USSR		B-K	127.60	202.40	64.96	89.8	10/24	8
3) 19	COSMOS 93	84A	USSR		T	132.06	303.18	48.36	91.6	-	-
4) 25	GTA-6 Target		US-NASA	ATLAS-AGENA	CK (FAILED)					10/25	-
5) 28	COSMOS 94	85A	USSR		B-K	124.00	160.58	65.05	89.3	11/5	8
6) 28	DOD R&D	86A	US-AF	THOR-AGENA	V	107.26	267.84	74.97	90.6	-	-
7) Nov. 2	PROTON II	87A	USSR		B-K	114.70	367.66	63.45	92.5	-	-
8) 4	COSMOS 95	88A	USSR		T	130.82	306.28	48.40	91.7	-	-
9) 6	EXPLORER 29	89A	US-NASA	TAT-DELTA	CK	691.30	1411.12	59.36	120.3	-	-
10) 8	SAMOS-Class	90A	US-AF	ATLAS-AGENA	V	92.13	179.17	93.88	89.0	11/11	3
11) 12	VENUS II	91A	USSR		T	Heliocentric Orbit					
12) 16	VENUS III	92A	USSR		T	Heliocentric Orbit					
13) 18	EXPLORER 30	93A	US-NASA	SCOUT	W	438.96	549.32	59.70	100.8	-	-
14) 23	COSMOS 96	94A	USSR		T	137.64	161.12	51.88	89.7	-	-
15) 26	COSMOS 97	95A	USSR		T	132.68	1329.28	48.41	108.9	-	-
16) 26	A-1A	96A	France	DIAMANT	H**	327.36	1116.62	34.23	108.7	-	-
17) 27	COSMOS 98	97A	USSR		B-K	127.10	339.52	65.00	92.1	-	-
18) 29	ALOUETTE II	98A	US-Canada	SCOUT	V	313.10	1851.94	79.82	121.4	-	-
19) 29	EXPLORER 31	98B	US-NASA			313.10	1846.36	79.82	121.3	-	-

*Carried OV2-1 and LCS II, broke up before satellites could be ejected.

**Hammaguir, Algeria

SUBORBITAL/MISSILE LOG

Oct. 15 - Nov. 30, 1965

Date	Flight	Program	Base	Vehicle	Altitude	Speed	Objectives
1) Oct. 16	XB-70 (2-9)	AF	Ed-AFB	none	59,000 ft.	Mach 4.8	air induction test *
2) 17	Research Plane	NASA	Hawaii	Convair 990	38,000 ft.	-	-
3) 20	R&D Launch	AFSC	WTR	TITAN II	-	-	-
4) 20	Sounding Rocket	NASA	WS	AEROBEE 150	110 miles	-	*
5) 21	M-2 (F-2)	NASA	Ed	B-52	-	-	*
6) 27	missile test	Army	WS	HIBEX	-	-	Anti-missile booster test *
7) 27	Sounding Rocket	NASA	-	NIKE-CAJUN	72 miles	-	*
8) 27	Static Test	NASA	Mar.	SATURN IB	-	-	*
9) 27	X-15-(3-51-75)	NASA-AF	Ed	B-52	237,000 ft.	Mach 4.73	BLN & HSD
10) Nov. 3	missile test	AF-SAC	WS	HOUND DOG/B-52	-	-	Air-surface missile test *
11) 3	X-15 (2-43-75)	NASA-AF	Ed	B-52	71,000 ft.	Mach 2.17	-
12) 4	X-15 (1-62-102)	NASA-AF	Ed	B-52	80,000 ft.	Mach 4.2	Pilot checkout *
13) 5	ABRES	AF	WS	ATHENA	-	-	*
14) 9	ICBM	AF-SC	WTR	MINUTEMAN II	-	-	*
15) 12	STAFF	AF	CK	POLARIS A-1	-	-	*
16) 12	missile test	AF-SAC	WS	HOUND DOG/B-52	-	-	*
17) 15	Sounding Rocket	AF	Eg-AFB	various	-	-	*
18) 16	LUSTRE	NASA	WS	AEROBEE 150	89.5 miles	-	*
19) 18	Sounding Rocket	NASA	WS	NIKE-APACHE	92 miles	-	*
20) 19	missile test	Army	WS	SPRINT	-	-	*
21) 19	Static Test	NASA	CK	APOLLO S/C Modules	-	-	*
22) 22	SURVEYOR test	NASA-Hughes	Hol-AFB	balloon	1400 ft.	-	landing system drop test *
23) 24	Static Test	NASA	Mar.	SATURN V, S-IC	-	-	-
24) 25	R&D flight	UK	W-A	BLACK KNIGHT	390 miles	10,800 mph	readiness test
25) 27	ICBM	AF-SAC	WTR	TITAN II	-	-	NIKE-X test *
26) 29	missile test	AF-SC	WTR	ATLAS D	-	-	-
27) 29	XB-70	AF	Ed-AFB	XB-70	-	-	-
28) 30	ICBM	AF-SAC	WTR	TITAN II	-	-	readiness test

SUBORBITAL/MISSILE LOG-Contd.

Oct. 15 - Nov. 30, 1965

29) Nov. - rocket test	USSR	-	-	-	*
30) - Sounding Rockets	NASA	-	-	-	*

Coding System: Ed-AFB--Edwards Air Force Base; WTR--Western Test Range; WS--White Sands; Ed--NASA-Edwards; CK--Cape Kennedy; Eg-AFB--Eglin Air Force Base; Hol-AFB--Holloman Air Force Base; W-A--Woomera, Australia; Mar--NASA-Marshall.

Note: X-15 flight numbers indicate which of the three planes is flying (number 1, 2 or 3 plane), how many flights that plane has made, and how many times it has been airborne (attached to the B-52). XB-70 flight numbers indicate which of the two planes is flying and how many flights that plane has made.

BLN -- boundary layer noise; HSD -- horizon scanning device.

Remarks:

- 2) Between Oct. 17 and 27 eight flights were made by the NASA Convair 990 aircraft from Hickam Field, Hawaii over the Pacific in order to make photographic and spectroscopic observations of the Ikeya-Seki comet.
- 4) NRL solar coronagraph experiment to study the Ikeya-Seki comet.
- 5) Taxi tests to checkout systems to take-off speeds.
- 7) Three acoustic grenade sounding rockets were fired on this date for synoptic atmospheric research. Launchings were at Wallops Island, Fort Churchill, and Point Barrow.
- 8) 2 1/2 minute full duration firing of S-1B first stage booster for the third flight vehicle scheduled for launch next year.
- 11) First flight using external propellant tanks.
- 13) Four stage solid fuel rocket launch in program of investigation of Advanced Ballistic Re-entry System.
- 14) Similar to Mark 11A re-entry vehicle launch (SPACE Daily, Aug. 19).
- 15) Last flight in the Stellar Acquisition Feasibility Flight series, a precursor to the Stellar Inertial Guidance System (STINGS).
- 16) Unsuccessful test of air to ground missile which malfunctioned and impacted in national forest.
- 17) During Nov. 15-19 twenty-two sounding rocket launchings were made using **ARCAS, NIKE-CAJUN, SPARROW-ARCAS, NIKE-JAVELIN, HONEST JOHN-NIKE-HYDAC**, rockets in support of the International Quiet Sun Year program.

SUBORBITAL/MISSILE LOG-Contd.

Oct. 15 - Nov. 30, 1965

- 18) Payload designed to collect samples of micrometeorite dust from Leonid meteor shower.
- 19) Payload designed to collect samples of micrometeorite dust from Leonid meteor shower.
- 20) Successful test of **NIKE-X** anti-ICBM missile.
- 21) Full duration static test firing of the **APOLLO** Service Module engines for the first **SATURN IB** flight next January -- partially successful, due to ground equipment malfunction the engine would not gimbal.
- 23) First 2 1/2 minute full duration firing of the 7.5 million pound thrust **S-IC** first stage booster for the **SATURN V** vehicle.
- 27) Between Nov. 29 and Dec. 3 a series of five flights were made by both No. 1 and No. 2 aircraft for a variety of tests including stability and air induction control system checks.
- 29) The USSR announced it has carried out a series of rocket launches into the Pacific with the impact area approximately midway between Japan, Hawaii and the Aleutian Islands.
- 30) Between October 15 and November 30 NASA launched some 19 sounding rockets: 1 from Point Barrow, Alaska; nine from Fort Churchill, Canada; four from Wallops Island; and five from White Sands. Vehicles included: **AEROBEE 150**, **NIKE-APACHE**, **NIKE-CAJUN**, and **NIKE-TOMAHAWK**. Objectives included: atmospheric structures research, solar studies, airglow, thermosphere, auroral research, magnetic fields, stellar spectral studies, and micrometeorite sampling. One launching failed.