

## ***FORECAST OF UPCOMING ANNIVERSARIES-- SEPTEMBER 2016***

### **150 Years Ago -- 1866**

September 21: Science fiction writer, H. G. (Herbert George) Wells born, England. Famous for such tales as "First Men in the Moon" and "War of the Worlds."

### **70 Years Ago -- 1946**

September 30: Thirteen engineers, technicians, and observers from the NACA's Langley Research Center, VA were assigned to assist the X-1 flight test program at the US Air Force Muroc test station in CA. This was the beginning of the Dryden Flight Research Center of NACA and NASA.

### **65 Years Ago -- 1951**

September 20: USAF Aerobee sounding rocket was launched with "arkful of animals" -- one monkey and 11 mice. Capsule was successfully recovered after a flight to a height of 236,000 feet. This was the first successful recovery of live animals in the Western Hemisphere, Holloman Air Force Base, NM.

### **60 Years Ago -- 1956**

September 20: First Redstone Jupiter C launched, reached an altitude of 682 miles and travelled 3,000 miles downrange, Cape Canaveral, Fla.

### **55 Years Ago -- 1961**

September 12: Discoverer 30 launched by Thor Agena, 4:00 p.m., EDT, Vandenberg AFB, CA. Capsule recovered.

September 13: MA-4 1 launched, unmanned Mercury spacecraft test of Atlas launch vehicle. 10:04 a.m., EDT, Cape Canaveral, Fla. The flight was successful.

September 17: Discoverer 31 launched by Thor Agena, 5:01 p.m., EDT, Vandenberg AFB, CA.

September 19: Site selection for the newly formed NASA Manned Spacecraft Center to be in Houston, TX.

### **50 Years Ago -- 1966**

September 8: First episode of a new television science fiction series "Star Trek" shown on NBC-TV. After an unsuccessful run of three seasons the series was cancelled in 1969.

September 12: Gemini 11 (GTA-11) launched, 8:05 a.m., EST, Cape Canaveral, Fla. Crew: Charles "Pete" Conrad, Jr. and Richard F. Gordon, Jr. first station-keeping using tethered linkage.

September 20: Surveyor 2 launched by Atlas Centaur, 8:32 a.m., EDT, Cape Canaveral, Fla. During a midcourse maneuver the spacecraft began tumbling, and the mission to soft-land on the moon was a failure.

### **45 Years Ago -- 1971**

September 2: Luna 18 launched by Proton K, 1341 UTC, Baikonur, USSR.

September 28: Luna 19 launched by Proton K, 1000 UTC Baikonur, USSR.

September 29: OSO 7 launched by Thor Delta, 4:45 a.m., EST, Cape Canaveral, Fla. First x-ray observations of a beginning solar flare and of solar "streamers." TETR 3 pick-a-back satellite also onboard.

### **40 Years Ago -- 1976**

September 1: US Navy TIP 3 launched by Scout, 2114 UTC, Vandenberg AFB, CA.

September 3: Viking 2 landed on Mars, 3:38 p.m. PDT, earth receiving time. Landing area - Utopia Planitia.

September 11: Raduga 2 (Statsionar 1) launched by Proton from Baikonur, USSR.

September 15: Soyuz 22 launched, Baikonur, USSR. Cosmonauts: Valeri F. Bykovsky and Vladimir V. Aksyonov.

### **35 Years Ago -- 1981**

September 24: Satellite Business Systems (SBS 2) launched by Delta, 7:09 p.m., EDT, Cape Canaveral, Fla. The satellite enhanced communications by providing fully switched private networks for use by businesses, the government and other organizations.

### **30 Years Ago -- 1986**

September 17: NOAA 10 launched by Atlas E, 8:52 a.m., PDT, Vandenberg AFB, CA. Included search and rescue instruments aboard the spacecraft.

### **25 Years Ago -- 1991**

September 12: STS-48 (Space Shuttle *Discovery*) launched 7:11 p.m., EDT, KSC. Crew: John O. Creighton, Kenneth S. Reightler, Jr., Mark N. Brown, Charles D. Gemar, and James F. Buchli. Cargo: UARS. Mission Duration: 5 days, 8 hours, and 28 minutes Landed at Edwards AFB, CA on September 18 at 3:38 a.m., EDT.

September 15: UARS (Upper Atmosphere Remote Research Satellite) successfully launched from the cargo bay of the *Discovery* by the Remote Manipulator System (RMS) at 12:23 a.m., EDT.

### **20 Years Ago -- 1996**

September 16: STS-79 (Space Shuttle *Atlantis*) launched from KSC at 4:54 a.m., EDT to dock with the Russian *Mir* station. Astronauts: William F. Readdy, Terrence W. Wilcutt, Jerome Apt, Thomas D. Akers, Carl E. Walz, John E. Blaha, and Shannon W. Lucid. Picked up astronaut Shannon Lucid and dropped off astronaut John Blaha. Landed at KSC on September 26 at 8:13 a.m., EDT. Mission Duration: 10 days, 3 hours, 19 minutes.

### **15 Years Ago -- 2001**

September 22: Deep Space 1, Comet Borrelly Flyby.

September 30: Stanford Audiophonic Photographic Infrared Experiment (Sapphire) launched. It was a US DoD-funded microsatellite built by the Stanford University students and faculty, carrying a voice synthesizer to convert text messages into human voice. (For launch details, see Starshine 3 below.)

September 30: PCSat (Prototype Communications SATellite) designed to act as a relay for amateur radio transmissions built by the midshipmen at the US Naval Academy. (For launch details, see Starshine 3 below.)

September 30: Picosat 9 is a British-built (US DoD-funded) satellite to test electronic components/systems in space conditions. (For launch details, see Starshine 3 below.)

September 30: Starshine 3, a microsatellite launched, along with Picosat 9, PCSat, and Sapphire, by an Athena 1 rocket from the Kodiak Launch Complex (KLC) on Alaska's Kodiak Island (located 400 km south of Anchorage) at 02:40 UTC on 30 September 2001. (Foul weather and auroral conditions had delayed the launch many times.) The 80 kg NASA satellite is basically a passive light-reflecting sphere of one meter diameter, consisting of 1,500 student-built mirrors (polished by kindergarten and grade school students from many countries) and 31 laser "retroreflectors".

### **10 Years Ago – 2006**

September 9: STS-115 (Space Shuttle *Atlantis*) launched from KSC at 11:15 a.m., EDT to dock with the International Space Station (ISS). Crew: Brent W. Jett, Jr., Christopher J. Ferguson, Heidemarie M. Stefanyshyn-Piper, Joseph R. (Joe) Tanner, Daniel C. Burbank, and Steven G. MacLean, who represents the Canadian Space Agency. Installed the P3/P4 integrated truss segment with its solar arrays, which doubled the existing power-generating capacity of the Station. Landed at KSC on September 21 at 6:21 a.m., EDT. Mission Duration: 11 days 19 hours 6 minutes.

September 18: Soyuz TMA-9 launched from Baikonur at 12:08 am by a Soyuz-FG rocket. It carried a Russian cosmonaut, Mikhail Tyurin, an American astronaut, Michael Lopez-Alegria plus the first woman space tourist, Anousheh Ansari to the International Space Station (ISS). She returned on Soyuz TMA 8.

September 22: Hinode (meaning sunrise), also known by its pre-launch name of Solar-B, was a joint Japanese-American (ISAS-NASA) satellite that was launched by an M-5 rocket from Uchinora Space Center at 5:36 pm EDT. It carried three major instruments to monitor the solar magnetic field.

### **5 Years Ago – 2011**

September 10: The Gravity Recovery And Interior Laboratory (GRAIL) mission consists of twin spacecraft designed to perform gravity mapping of the Moon, to determine the structure of the lunar interior, and to advance understanding of the thermal evolution of the Moon. Both GRAIL spacecraft (GRAIL-A and GRAIL-B) were launched from Cape Canaveral Air Force Station on a single Delta II 2920-10 at 13:08:52 UT.

September 24: NASA's 6.3-ton Upper Atmosphere Research Satellite, or UARS fell harmlessly back to Earth over the Pacific Ocean.

September 29: Tiangong 1, the first Chinese (PRC) Chinese space laboratory module, launched from Jiuquan at 13:16 UT by a Long March 2F rocket. Tiangong 1, which means heavenly palace in English, was designed to demonstrate the vital docking technology required for a future space station on this test flight.