

FORECAST OF UPCOMING ANNIVERSARIES -- NOVEMBER 2014

125 Years Ago – 1889

November 20: Edwin P. Hubble born.

80 Years Ago - 1934

November 9: Carl E. Sagan born.

60 Years Ago - 1954

November 2: Convair XYF-1 took off vertically, flew horizontally, and then landed vertically, San Diego, CA.

55 Years Ago – 1959

November 7: Discoverer 7 (CORONA 9004) orbited by Thor Agena, 3:28 p.m. EST, Vandenberg AFB.

November 21: Discoverer 8 (CORONA 9005) orbited by Thor Agena, 2:28 p.m. EST, Vandenberg AFB.

November 26: Lunar Satellite Atlas-Able IV failed to orbit, 2:26 a.m., EST, Cape Canaveral, Fla.

50 Years Ago - 1964

November 5: Mariner 3 launched by Atlas Agena, failed to jettison spacecraft shroud, 1422 EST, Cape Canaveral, Fla.

November 6: Explorer 23 launched by Scout, 7:02 a.m., EST, Wallops Flight Facility (WFF).

November 21: Explorers 24 and 25 launched by Scout, first NASA dual payload, 9:09 a.m., PST, Vandenberg AFB.

November 28: Mariner 4 launched by Atlas Agena, 0922 EST, Cape Canaveral, Fla. Encountered Mars. July 14, 1965. First successful Mars probe.

November 30: Zond 2 launched by Modified SS-6 (Sapwood) or Molniya rocket, 1312 UTC, Baikonur, USSR.

45 Years Ago - 1969

November 8: Azur launched by Scout, US/West German cooperative satellite, 8:52 p.m., EST, Vandenberg AFB.

November 14: Apollo 12 launched by Saturn V, SA-507, second lunar landing mission. Crew: Charles Conrad Jr., Alan L. Bean, and Richard F. Gordon Jr., 11:22 a.m., EST, KSC. Richard Nixon becomes first President to attend a launch when he witnessed the Apollo 12 launch. First use of S-IVB stage to perform an evasive maneuver. First use of a hybrid trajectory. First demonstration of a point-to-point landing capability. First use of two lunar surface EVA periods. First Apollo Lunar Surface Experiments Package (ALSEP) deployed on Moon. First deployment of the erectable S-band antenna. First use of geologist to plan lunar surface traverse in real time. First documentation of samples as they were taken. First double core tube sample taken. First return of spacecraft parts from lunar surface (Surveyor 3). First Saturn V hit by lightning (while passing through a low cloud the vehicle caused an electrical discharge through the Saturn to the ground). First multi-spectral terrain photography from lunar orbit. First artificial earthquake (after leaving the Moon, LM crashed into lunar surface).

November 21: Skynet 1 launched by Thor Delta, 1937 EST, Cape Canaveral, Fla. First United Kingdom communications satellite.

40 Years Ago – 1974

November 3: First polar images of Jupiter sent back to Earth from Pioneer 11.

November 15: NOAA 4 (ITOS-G) was one in a series of improved TIROS-M satellites launched with new meteorological sensors. Launched by a Delta, 12:11 p.m., EST, Vandenberg AFB. Oscar 7 (a small communications satellite designed by amateur radio operators) and Intasat (the first Spanish satellite) were also launched piggyback.

November 21: Intelsat IV F-8 launched by Atlas Centaur, 6:44 p.m., EST, Cape Canaveral, Fla.

November 22: Skynet II-B launched by Delta, 1928 EST, Cape Canaveral, Fla.

35 Years Ago – 1979

November 21: DSCS II-13 and 14 launched by Titan 3C, 9:09 p.m., EST, Cape Canaveral, Fla.

30 Years Ago - 1984

November 8: STS-51A (Space Shuttle *Discovery*) launched from KSC, 7:15 a.m., EST. Crew: Frederick H. (Rick) Hauck, David M. Walker, Joseph P. Allen, Anna L. Fisher, and Dale A. Gardner. Satellites TELESAT-H (ANIK) and SYNCOM IV-I (also known as LEASAT-1) deployed. First retrieval and return of two disabled communications satellites (PALAPA-B2 and WESTAR-VI). First astronaut to capture a satellite (Palapa) by using the MMU (J. Allen). Landed at KSC, November 16 at 6:59 a.m., EST. Mission Duration: 7 days, 23 hours, 44 minutes.

November 9: Anik D2 launched from STS 51-A.

November 9: Syncom IV-1 launched from STS 51-A.

November 12: Palapa B-2 retrieved by STS 51-A.

November 12: NATO III-D launched by Delta, 7:34 p.m., EST, Cape Canaveral, Fla.

November 14 - Westar 6 retrieved by STS 51-A.

25 Years Ago - 1989

November 18: COBE (Cosmic Background Explorer) launched by Delta, 6:34 a.m., PST.

November 23: STS-33 (Space Shuttle *Discovery*) launched from KSC. Crew: Frederick D. Gregory, John E. Blaha, Kathryn C. Thornton, F. Story Musgrave, and Manley L Carter, Jr. DoD mission. Landed Edwards AFB, CA, November 27, 7:23 p.m., EST. Mission Duration: 5 days, 6 minutes.

November 23: DoD Satellite launched from STS-33.

20 Years Ago – 1994

November 1: WIND launched by Delta 2 as part of the ISTP Project at 09:31:00 UTC.

November 3: STS-66 (Space Shuttle *Atlantis*) launched 11:59 a.m. EDT, KSC. Crew: Donald R. McMonagle, Curtis L. Brown, Jr., Ellen Ochoa, Scott E. Parazynski, Joseph R. Tanner, and Jean-Francois Clervoy (France). The Atmospheric Laboratory for Applications and Sciences - 3 (ATLAS-03), the primary payload, made the first detailed measurements and studied the possible effects of the ozone hole on mid-latitudes. Landed November 14 at 10:33 a.m. EST at Edwards Air Force Base. Mission Duration: 10 days, 22 hours, 34 minutes.

15 Years Ago – 1999

November 19: Shenzhou, a Chinese (PRC) unmanned capsule, launched by a Long March 2F rocket from Jiquan launch center in Gansu province at 6 a.m. (22:30 UTC). It carried a mannequin for test purposes in preparation for manned "taikonaut" flights. Uncrewed 14-orbit test flight & recovery, on an updated CZ-2F, of China's human space flight "Project 921", using a modified Russian Soyuz spacecraft.

November 26: Galileo flyby of Jupiter moon Io.

10 Years Ago – 2004

November 16: X-43A hypersonic test vehicle breaks a record as its scramjet engine propels it nearly 10 times the speed of sound.

November 20: Swift (Gamma Ray Burst Explorer; Explorer 84), launched by a Delta 2 rocket from Cape Canaveral at 12:16 p.m. EST. The astrophysics satellite enabled detection/location of Gamma Ray Bursts (GRB).

5 Years Ago – 2009

November 16: STS-129 (Space Shuttle *Atlantis*) launched 2:28 p.m. EST, KSC. Crew: Charles Hobaugh, Mike Foreman, Leland Melvin, Robert Satcher Jr., Randy Bresnik, and Barry Wilmore. The final space shuttle crew rotation flight to or from the space station. Atlantis delivered parts to the space station, including a spare gyroscope. Landed November 27 at 9:44 a.m. EST at KSC. Mission Duration: 10 days, 19 hours, 16 minutes.