

FORECAST OF UPCOMING ANNIVERSARIES -- NOVEMBER 2016

55 Years Ago – 1961

November 15: Transit IV-B launched by Thor Ablestar, 5:25 p.m., EST, Cape Canaveral, Fla.

November 16: Discoverer 35 launched by Thor Agena, 4:23 p.m., EST, Vandenberg AFB, CA.

November 18: Ranger 2 launched by Atlas Agena, 3:12 a.m., EST, Cape Canaveral, Fla.

November 21: The Air Force launched a Titan ICBM from Cape Canaveral carrying a target nose cone to be used in Nike-Zeus antimissile-missile tests. This was the first Titan ICBM to be fired from Cape Canaveral by a military crew.

November 28: The prime contract was awarded to North American Aviation for the development and construction of the Apollo spacecraft.

November 29: Enos, a 37.5 pound five-year-old male chimpanzee, sent aloft at 1:28 PM from Cape Canaveral in a capsule atop a Mercury-Atlas 5 rocket, 10:07 a.m., EST, Cape Canaveral, Fla.

50 Years Ago – 1966

November 6: Lunar Orbiter 2 launched by Atlas Agena, 6:21 p.m., EST, Cape Canaveral, Fla. Photographed lunar landing sites from lunar orbit.

November 11: The last Gemini flight, *Gemini XII* (GTA-12), was launched on 2:08 p.m., EST, Cape Canaveral, Fla. During this mission, American astronauts James A. Lovell, Jr. and Edwin E. "Buzz" Aldrin, Jr. completed three EVAs and a docking with an Agena target vehicle.

45 Years Ago – 1971

November 13: Mariner 9 becomes first spacecraft to orbit another planet – Mars. Transmitted 6,876 pictures. Launched May 30, 1971.

November 15: Explorer 45 (Explorer S-Cubed A) launched by a Scout, 12:52 a.m. EST, San Marco Range, Kenya .

35 Years Ago – 1981

November 4: Venera 14 launched (USSR Venus Lander/Flyby) by Proton K from Baikonur.

November 12: STS-2 (Space Shuttle *Columbia*) launched, 10:10 a.m., EST, KSC. Crew: Joe H. Engle and Richard H. Truly. Landed November 14 at 1:23 p.m., PST, Edwards Air Force Base (EAFB), CA. Mission Duration: 2 days, 6 hours, 13 minutes.

November 19: RCA-Satcom 3-R launched by a Delta, 8:37 p.m., EST, Cape Canaveral, Fla.

30 Years Ago -- 1986

November 13: Polar Beacon and Research satellite aka Polar Bear launched. BEAR is an acronym for Beacon Experiment and Auroral Research. It was part of the Air Force STP P87-1 mission. Launched by a Scout, Vandenberg AFB, CA. at 4:23 p.m. PST. It was used to study communication interference caused by solar flares and aurora activity in support of the military.

25 Years Ago – 1991

November 24: STS-44 (Space Shuttle *Atlantis*) launched 6:44 p.m. EST, KSC. Crew: Frederick D. Gregory, Terence T. “Tom” Henricks, James S. Voss, Story F. Musgrave, Thomas J. Hennan, and Mario Runco. Deployed the third Defense Support Program satellite. Landed Dec. 2, 5:34 p.m., EST, Edwards Air Force Base (EAFB), CA. Mission Duration: 6 days, 22 hours, 51 minutes.

November 28: First in series of improved Block 5D-2 satellites in the Defense Meteorological Satellite Program, launched by Atlas E from the Vandenberg AFB, CA.

20 Years Ago – 1996

November 4: Galileo probe, Flyby of Callisto.

November 7: Mars Global Surveyor launched by Delta 2 from Cape Canaveral, Fla. Arrived at Mars on 12 September 1997 (UTC). First successful U.S. mission to arrive at Mars since the Viking landers in 1976. Contact lost November 2006.

November 19: STS-80 (Space Shuttle *Columbia*) launched 2:55 p.m. EST, KSC. Crew: Kenneth D. Cockrell, Kent V. Rominger, Tamara E. Jernigan, Thomas D. Jones, and F. Story Musgrave. Deployed German-built Orbiting and Retrievable Far and Extreme Ultraviolet Spectrograph-Shuttle Pallet Satellite II (ORFEUS-SPAS II) and Wake Shield Facility (WSF). Landed December 7, 6:49 a.m. EST, KSC. Mission Duration: 17 days, 15 hours, 53 minutes.

15 Years Ago – 2001

November 27: DirecTV-4S, a geosynchronous communications spacecraft that provides 300 local TV channels to 41 metropolitan communities, was launched by an Ariane 44LP rocket from Kourou at 00:35.

10 Years Ago – 2006

November 17: Navstar 59, also known as USA 192, as GPS 2RM F-3, and as GPS 2R-16, an American navigational satellite in the GPS fleet, was launched by a Delta 2 rocket from Cape Canaveral at 19:12 UTC.

5 Years Ago – 2011

November 8: Phobos-Grunt (alternatively Fobos-Grunt) was a Russian mission designed to land on the Martian moon Phobos and return a sample to Earth. The primary scientific objective was to analyze the sample on Earth to understand the origin and reconstruct the history of Phobos. It was launched at 2016 UT on a Zenit 2SB41.1 rocket from the Baikonur Cosmodrome in Kazakhstan into an elliptical Earth orbit. The plan was to use a Fregat upper stage to carry Phobos-Grunt and Yinghuo-1 on an eleven month cruise to Mars. However, the later firings never occurred and the spacecraft remained in Earth orbit. The orbit of Phobos-Grunt decayed until it entered the Earth's atmosphere on January 15, 2012. About 450 pounds of the probe likely crashed into the Pacific Ocean.

November 14: Soyuz-TMA 22 was launched from Baikonur at 10:11 UT by a Soyuz launch vehicle. Crew: NASA astronaut Dan Burbank; and Russian cosmonauts Anton Shkaplerov and Anatoly Ivanishin. The craft docked with the ISS Poisk module on 16 November 2011 at 05:24 UT. This is the final flight of a Soyuz-TMA capsule. Future missions will be flown by a TMA-M spacecraft, the newer digital Soyuz spacecraft.

November 26: The Mars Science Laboratory (MSL), nicknamed Curiosity, is a large rover launched at 15:02 UT (10:02 a.m. EST) from Space Launch Complex 41 on Cape Canaveral Air Force Station in Florida with the objective of exploring the Martian environment as a former or current habitat for life.