

U.S. to send its Gemini capsule, containing two astronauts, on its first manned flight.

Both the U.S. and the USSR to launch satellites equipped with magnetometers in a joint geomagnetic field program to take place during the period of the International Year of the Quiet Sun, or IQSY (1964-65).

France's first satellite, FR-1, to be launched with a U.S.-built Scout rocket, followed soon after by FR-2. They will examine the ionosphere.

France to launch Satmos, a four-pound satellite designed to study problems of re-entry from outer space, with a French army rocket.

EARLY 1965:

Centaur rocket, designed to launch large U.S. unmanned moon and planet probes, to become operational.

Two Soviet cosmonauts expected to try to orbit close to the moon's surface taking photographs and calculations and fly back to earth.

LATER IN 1965:

Saturn IB, America's big booster for Project Apollo test missions, to make first flight.

Scout rocket to launch Italian atmospheric density satellite from a platform in the Indian Ocean near the equator.

Soviets expected to orbit three or more cosmonauts in a single capsule for flights of ten days or longer.

Complete Titan III, carrying two strap-on boosters, to make its flight test. It is to be the workhorse of American military space missions.

First flight of a Bios, U.S. satellite for studying the effects of long space flights on different forms of life, including primates.

U.S. to orbit three 3,500-pound unmanned astronomical observatories.

France to send another monkey on a longer sub-orbital trip, launched with a Diamant I rocket.

First flight of a U.S. Pioneer, a 120-pound Delta package, slated to go 90 million miles as a sun probe.

IN 1966:

The U.S. Air Force's high altitude communication satellites to be ready for stringing around the globe in fixed (24-hour) orbits to form a wide-band radio system.

Soviet cosmonaut team expected to try to put together a spaceship from parts orbiting in space and ride it around the moon and return to earth.

First of five flights of U.S. Lunar Orbiter, an 800-pound unmanned photo reconnaissance spacecraft designed to help pick landing sites for American manned moon expedition.

U.S. to make its first manned orbital flight in the type of capsule that will be used for the moon trip. The Saturn I-B will do the boosting.

U.S. Scout rocket to launch UK3, the first satellite designed, built and tested entirely in Great Britain.

U.S. to launch advanced 1,000-pound Mariner on an unmanned mission to Venus.

U.S. to take advantage of favorable Mars-shot time in December by sending a Voy-

ager probe, weighing 5,500 pounds, to orbit around and land on that planet.

1967:

Soviets expected to attempt construction of a flying laboratory in space with crews of several men.

The European Space Research Organization to orbit small satellites.

U.S. to send an unmanned Voyager to Venus in June when conditions are especially favorable.

Soviet cosmonaut team expected to try to put together a spacecraft in an earth orbit, ride it to the moon, land there and return to earth.

U.S. to orbit a 900-pound advanced solar observatory.

Soviets expected to start concentrating on a program for manned flight to Mars and back.

France's second generation booster, Diamant 2, to be available for putting heavier satellites into orbit.

1968:

U.S. expected to try to climax Project Apollo by landing two astronauts on the moon, while a third orbits about the moon, and then bring all three back to earth safely.

Soviets expected to launch an orbital platform containing a large optical telescope operated by two men.

U.S. expected to make a decision on whether to build Nova, a launch vehicle three times as powerful as Saturn, for manned flights to the planets.

1969:

U.S. to launch an unmanned Voyager to Venus in January and one to Mars in March.

European Space Research Organization to orbit observatories weighing 1,100 to 2,200 pounds and send lighter unmanned payloads to the moon.

• Science News Letter, 84:315 Nov. 16, 1963

Nature Note

➤ **CURSE** of the ancient pioneers and hunters and mainspring of many legends is the gruff, unfriendly grizzly bear, a vanishing resident in the North American wilderness.

Longfellow called him "the grim, taciturn bear, the anchorite monk of the desert," which well describes his personality. He is distinguished from the black bear group by his larger size and iron-gray, sometimes silver gray, fur. The grizzly always has a pronounced hump, as his body builds up to a powerful pyramid of muscle where the neck and forelimbs join on his back.

Forest dwellers in the western states are getting their last glimpses of the great bear for this season, as the grizzly begins to hole up in his den. Contrary to popular belief the bear does not hibernate but only goes into a deep sleep, since winter forests do not afford much in the way of food.

Today the grizzly can be found in the wilderness areas of Alaska, Montana, Wyoming, Idaho and Washington, as well as parts of Canada. The largest single group is probably that at Yellowstone Park.

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