A New Year in Space

The launch pads of NASA will do nine-tenths of their business for other customers in 1976

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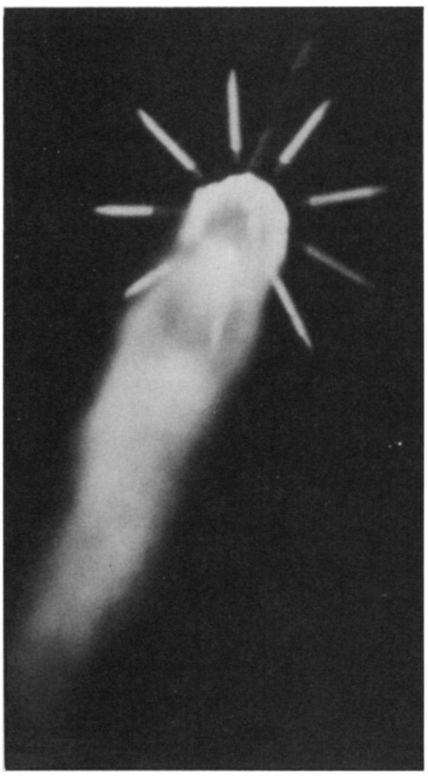

NASA

Boosters detach during GOES-1 launch.

The schedule of the National Aeronautics and Space Administration's launch plans for 1976 is an oddly revealing document. On the surface it shows a space program in the middle of hard times, pressed for funds and short on science. The condition is undeniable. Viewed on other levels, however, it underscores the ways in which the formerly esoteric domain of space research has become increasingly interwoven with the affairs of man.

Of the 20 satellites to be launched by NASA during the coming year, only two will actually be working for the space agency. The vast majority—14—will be devoted to communications, with two more for weather-watching, one for navigation and a sole adventurer into deep space: the sun-bound Helios B, which NASA will send aloft for a German group.

Exclusively U.S. endeavors, in fact, will comprise but 65 percent of the launches during the bicentennial twelvemonth. Of the rest, a pair will be for the International Telecommunications Satellite Organization. Two others will be launched for NATO (with the U.S. Department of Defense as intermediary), as well as an experimental Communications Technology Satellite for Canada, Germany's Helios B and Indonesia's first communications satellite, known as Palapa (a coconut confection that was an ancient symbol of Indonesian unification).

This does not mean that NASA is spending all its money putting other people's payloads into space. It has been in the launch-selling business for years. In 1976, only four spacecraft—the two belonging to the agency and the German and Canadian probes, in which NASA has a cooperative role including launch services, some tracking responsibilities and a few experiments—will be flown from the NASA pocketbook. The others are known in agency parlance as "reimbursables."

The two NASA satellites are LAGEOS (LAser GEOdynamic Satellite), a mirrored ball designed as an optimum reflector for laser measurements of the earth's crustal and rotational motions, and GP-A (Gravitational Probe A), to be orbited as part of a program known as Operation Redshift to test theories of relativity. The National Oceanic and Atmospheric Administration will operate the two meteorological probes on the calendar: ITOS-E2, instrumented for atmospheric profile measurements as well as photos, and GOES-B, which will provide large-scale images from a fixed position some 23,000 miles above the earth. Besides Helios B, the only other non-talksat will be the newest in the U.S. Navy's Transit series, designed to develop a worldwide network of super-accurate time information for navigation and other purposes.

Among the numerous talksats, the real bread-and-butter satellites will be a pair of the standard international Intelsat IVA's and the first two in a U.S. domestic series to be known as Comstar, leased by American Telephone and Telegraph. The second and third talksats in a series owned by RCA are also on the list, as are the first of Comsat's new Marisats, to be used for diverse marine communications ranging from military needs to oil companies keeping in touch with their offshore drilling rigs. The NATO satellites will be for military purposes, as will P76-5, a Defense Nuclear Agency probe studying ionospheric effects on ground reception of wide-band satellite signals. It will be launched aboard a NASA rocket by the Air Force.

Despite the small number of NASA payloads on the schedule, the agency will be busy with a variety of other activities, some of which, such as aeronautic and energy-related research at Langley Research Center in Virginia, are not always directly connected with space. Also, in June, astronauts will begin practicing for the coming of the space shuttle by flying a radically modified Gulfstream II twin-engine jet. A variety of sounding rockets will be flown from Wallops Island, Cape Canaveral and the Air Force Western Test Range (a recent Wallops series included rockets fired *over* the path of a Nimbus weather satellite), and of course, in July, Viking 1 gets to Mars. □

NASA 1976 LAUNCH SCHEDULE

Date	Satellite	User
Jan. 13	CTS-A	Canada/U.S.
Jan. 15	Helios B	Germany/U.S.
Feb.	Intelsat IVA-B	Intelsat
Feb. 12	NATO III-A	NATO
Mar. 24	Satcom B	RCA
Mar.	Comstar A	Comsat
Apr.	Marisat A	Comsat
Apr.	LAGEOS	NASA
May	P76-5	D.N.A.
May	Marisat B	Comsat
May	Comstar B	Comsat
May	GP-A	NASA
2nd Q	Transit	USN
July	Palapa A	Indonesia
Aug.	NATO III-B	NATO
Oct.	Satcom C	RCA
Nov.	ITOS-E2	NOAA
Nov.	GOES-B	NOAA
Dec.	Marisat C	Comsat
Dec.	Intelsat IVA-C	Intelsat