

# the satellite club

## Fourth nation joins exclusive group with orbiter launched from own territory

More and more countries are joining the satellite club with orbiting probes of their own. The most recent addition came when Australia's first satellite was launched amid the swirling red dust of Woomera rocket range on Nov. 23. Boosted by a U.S. Redstone rocket, the 160-pound satellite began circling the earth every 99 minutes, returning data through the worldwide tracking network of the U.S. National Aeronautics and Space Administration.

Australia is now the fourth nation, with the U.S., Russia and France, to have its own satellite put into orbit from its own territory. Canada and Britain have launched satellites from the U.S., while Italy has orbited a probe

from the U.S. and one from a floating platform off the coast of Kenya. Three attempts by Japan from its island of Kyushu have all ended in failure.

The Australian probe was named WRESAT 1, as the first satellite of the Weapons Research Establishment. It was designed and built in a year by scientists and engineers at the WRE and Adelaide University. A joint U.S.-Australian team handled the launch.

Instruments aboard the satellite measured X-ray and ultraviolet radiations from the sun, as well as other solar phenomena and upper atmospheric data. Scientists have been studying the returns to learn more about the effects of upper atmospheric conditions on

weather, including the long-term climatic effects of solar emissions.

WRESAT itself resembled a black cone, five feet high and 30 inches across at the base. It settled into an elliptical orbit that carried it out as far as 775 miles from earth and as close as 105 miles. This was a more elongated orbit than had been planned, because the probe went into orbit at a higher velocity than intended, but it did not prevent useful data from being obtained before the batteries began to run down.

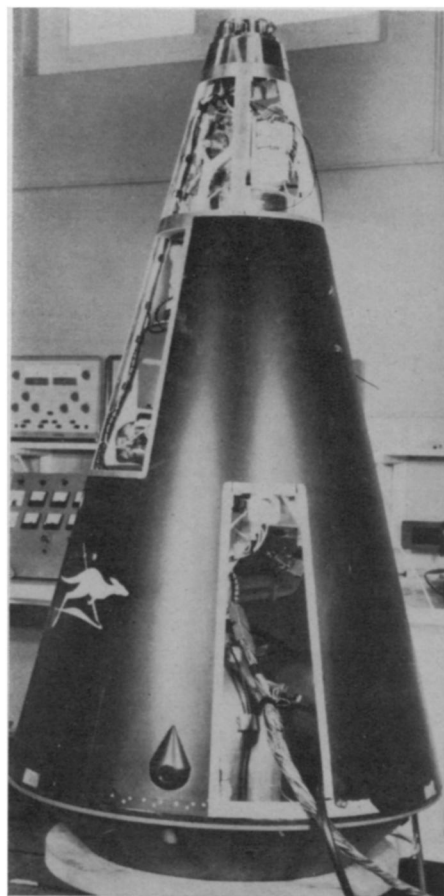
The Redstone launch vehicle was one left over from Project Sparta, a joint U.S.-U.K.-Australian series of reentry experiments completed at Woomera a month before WRESAT went into orbit.

### International Satellite Launches (except U.S.S.R.)

Name	Nation	Date	Nature
Ariel 1	UK	4/26/62	joint (with NASA) ionospheric satellite <sup>1</sup>
Alouette 1	Canada	9/28/62	ionospheric <sup>1</sup>
Ariel 2	UK	3/27/64	galactic noise, micrometeoroids, ozone <sup>1</sup>
San Marco 1	Italy	12/15/64	ionospheric, air density measurements <sup>1</sup>
A-1	France	11/26/65	test satellite for Diamant launch vehicle
Alouette 2	Canada	11/28/65	ionospheric; double launch with NASA's Explorer 31 <sup>1</sup>
FR-1	France	12/ 6/65	VLF radio wave propagation <sup>1</sup>
D-1A	France	2/17/66	geodetic, solar cell degradation data <sup>1</sup>
Lambda 4S-1	Japan	9/26/66	failed: fourth stage attitude control error
Lambda 4S-2	Japan	12/20/66	failed: fourth stage did not ignite
D-1C	France	2/ 8/67	geodetic; reflectors for ground lasers
D-1D	France	2/15/67	same payload as D-1C
Lambda 4S-3	Japan	4/13/67	failed: third stage did not ignite
San Marco 2	Italy	4/26/67	like San Marco 1; launched from sea platform <sup>2</sup>
Ariel 3	UK	5/ 5/67	ionospheric; first all-British launch <sup>1</sup>
ESRO 2A	ESRO	5/29/67	failed (European Space Research Organization) <sup>1</sup>
WRESAT 1	Aus.	11/29/67	ionospheric, solar radiation data <sup>2</sup>

<sup>1</sup> launched from U.S. by U.S.-made booster

<sup>2</sup> launched by U.S. booster, but not from U.S. territory



Australian News Bureau

*Kangaroo emblazons WRESAT 1.*