NASA News

National Aeronautics and
Space Administration

Washington, D.C. 20546
AC 202 755-8370

For Release:

IMMEDIATE

Nicholas Panagakos
Headquarters, Washington, D.C.
(Phone: 202/755-3680)

Frank Bristow
NASA Jet Propulsion Laboratory, Pasadena, Calif.
(Phone: 213/354-5011)

RELEASE NO: 79-132

VOYAGER PICTURES REVEAL NEW MOON OF JUPITER

A new moon of Jupiter has been discovered in pictures taken by NASA's Voyager 2 spacecraft July 8 during its excursion through the Jovian system.

While studying pictures of Jupiter's thin ring of particles taken by Voyager 2 cameras less than 24 hours prior to the spacecraft's close passage by the planet, two researchers at the California Institute of Technology -- graduate student David Jewitt and scientist G. Edward Danielson, a member of the Voyager Imaging Science team -- determined that a star-like object in the ring plane was a moon.

-more-

October 16, 1979

Temporarily designated 1979J1, the new satellite is the 14th known to be circling the giant planet. (Another possible moon, farther out from Jupiter and awaiting confirmation, may have been seen in Earth-based photographs several years ago by Charles T. Kowal of Caltech, discoverer of Jupiter's 13th satellite.)

The new moon adds to the list of newly-found Jovian phenomena first observed by Voyager 1 in March 1979 and expanded upon by Voyager 2 four months later. Among these firsts are the ring itself, extensive volcanic activity on the satellite Io, and tremendous bolts of lightning in Jupiter's atmosphere.

1979J1 is the closest moon to Jupiter, orbiting the planet at the outer edge of the ring about 57,800 kilometers (36,000 miles) from the cloud tops. It is estimated to be only 30 to 40 km (18 to 25 mi.) in diameter, smaller than seven of Jupiter's other moons but larger than six.

The satellite's orbital period is 7 hours, 8 minutes and moves in its orbit at a velocity of 30 kps (67,000 mph). This is the fastest moving satellite in the solar system and it has the shortest orbital period.

First hint that the apparent star-trace photographed by Voyager 2 was a Jovian satellite came when Jewitt and Danielson, after an exhaustive search, found no star in the vicinity.

This led to examination of another Voyager 2 photo of higher resolution showing the same portion of the ring, the same curious object and some trails of known stars. Verification that the object was indeed a satellite of Jupiter was based on the differing angles and lengths of the star trails and the trail left by the target object. From the two pictures, an orbit was calculated independently by Jewitt and by Dr. Stephen Synnott, optical navigation engineer at the Jet Propulsion Laboratory in Pasadena, Calif., where the Voyager project is managed for NASA.

A special analysis of pictures taken four months earlier by Voyager 1 is being conducted in an effort to locate the same satellite.

Voyager scientists believe 1979J1, because of its location at the outer edge of Jupiter's ring, may directly influence the composition of the ring either by sweeping out or supplying ring particles.

Voyagers 1 and 2 obtained more than 32,000 pictures and millions of other scientific measurements of Jupiter, its satellites and environment from January to August 1979. Both spacecraft are enroute to Saturn with Voyager 1 scheduled to arrive there in November 1980 and Voyager 2 in August 1981.

-end-

Note:

A photograph illustrating this news release will be distributed without charge only to media representatives in the United States. It may be obtained by writing or phoning:

Public Affairs Audio-Visual Office
LFD-10/NASA Headquarters
Washington, D.C. 20546

Telephone No: 202/755-8366 Photo No: 79-H-626

(Index: 23, 36, 44)