Voyager Bulletin

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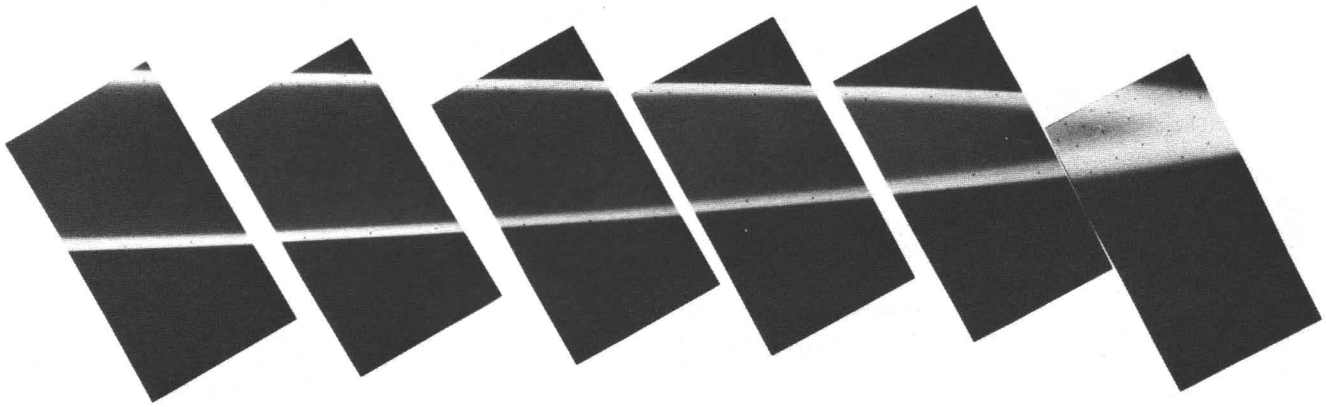

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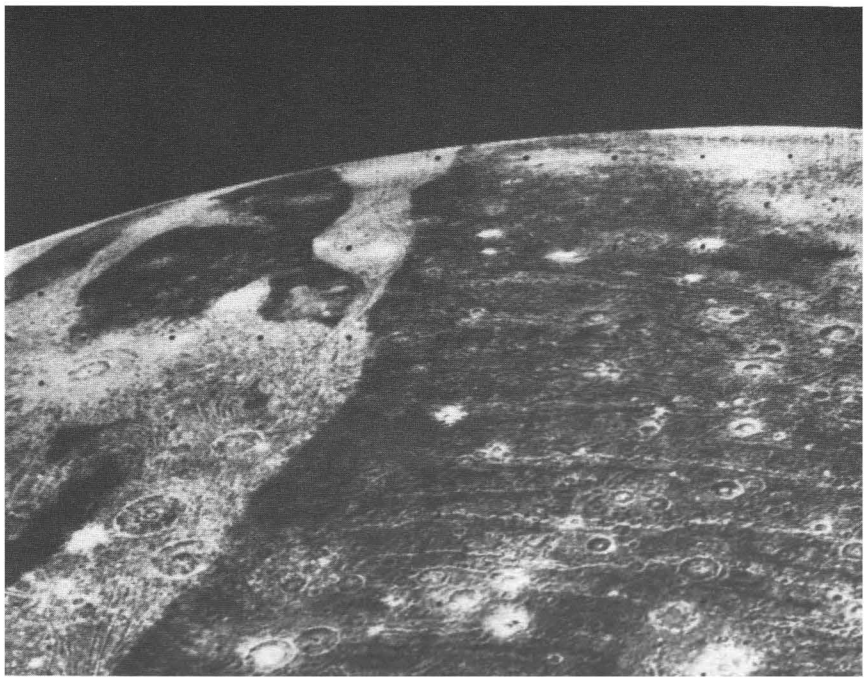
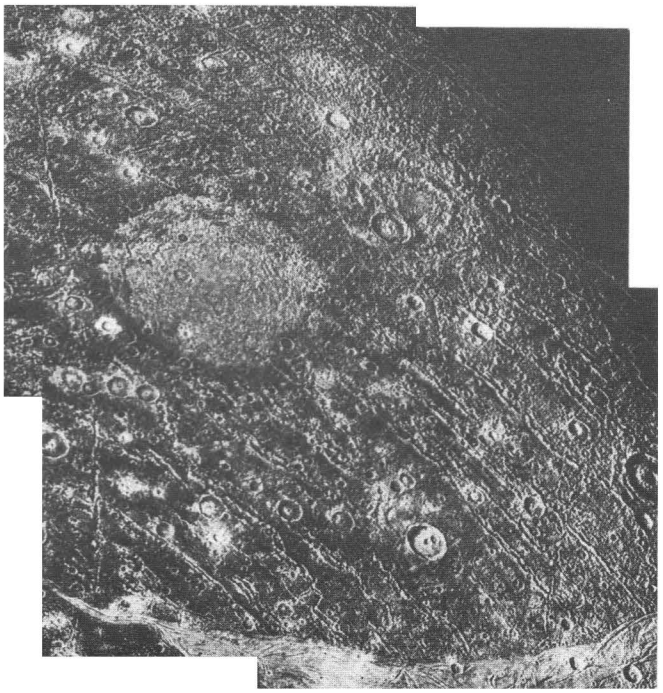
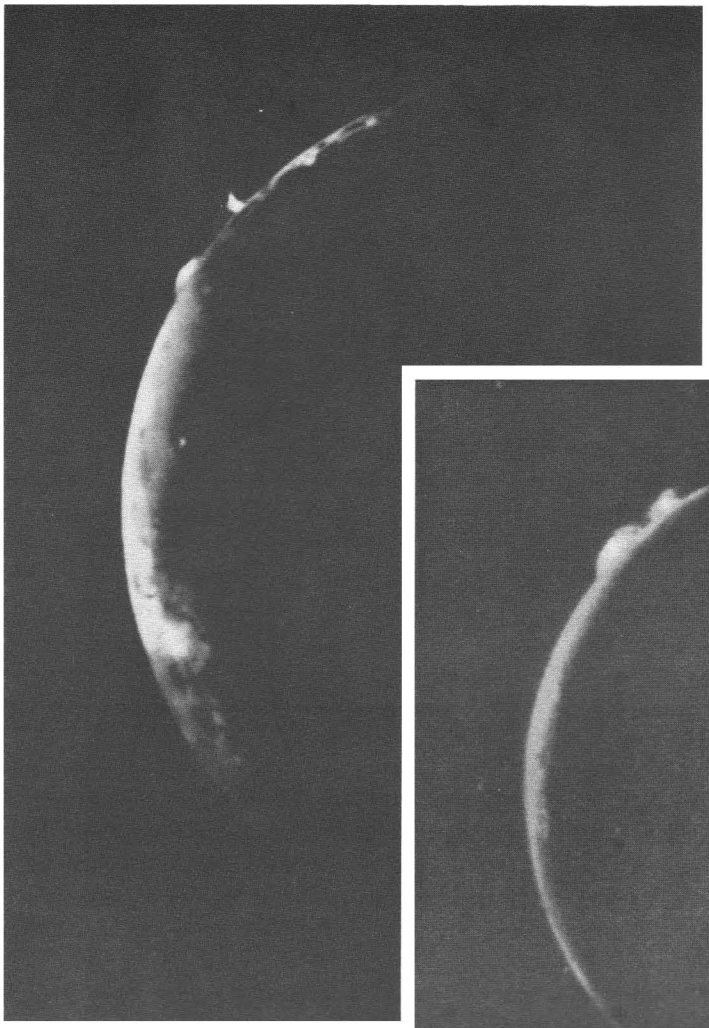
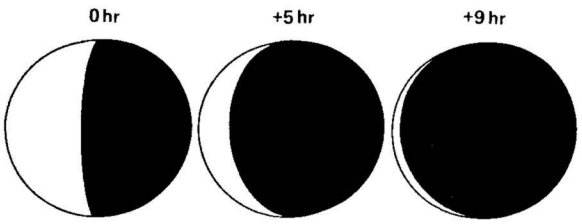
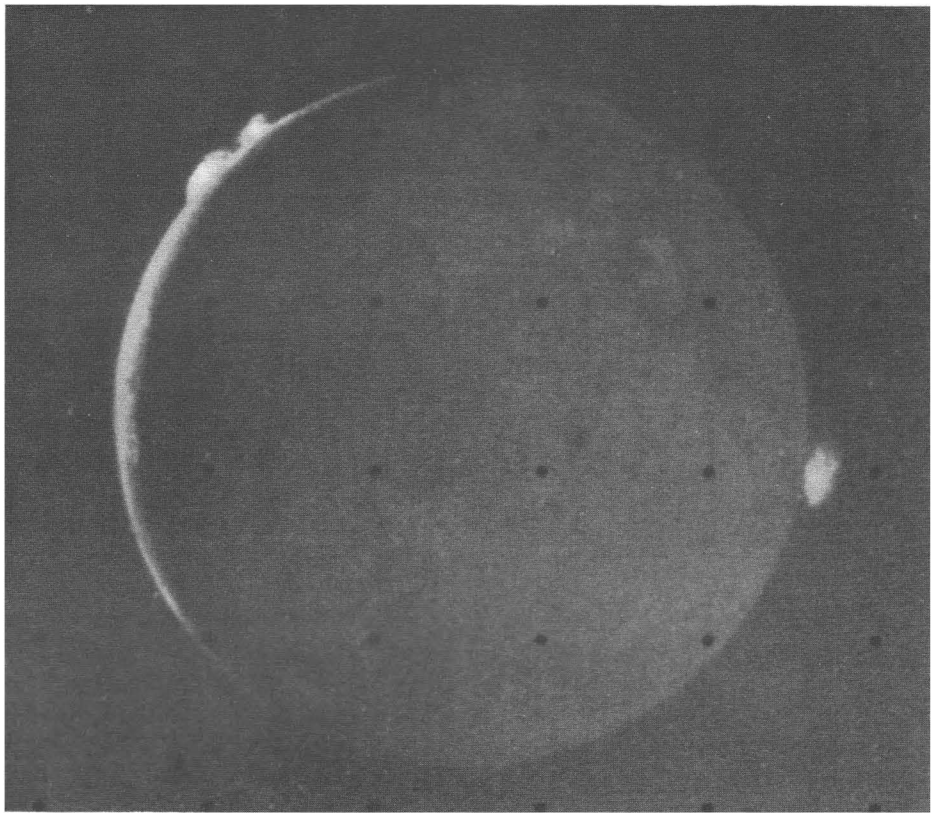




CRATERED GANYMEDE – TOP: From 138,000 km (86,000 mi), Ganymede, largest of Jupiter's 13 moons, shows bright young craters; light, linear stripes resembling the outer rings of a large impact basin; and light and dark terrain. Below left: Another region of Ganymede, observed on July 9 from about 100,000 km (62,000 mi), shows numerous impact craters, many with bright ray systems. The large ray crater at upper center is about 150 km (93 miles) in diameter. The rough mountainous terrain at lower right is the outer portion of a large fresh impact basin which was formed later than most of the other terrain. At the bottom of the mosaic, portions of grooved terrain transect older portions, possibly the result of newer icy material. The dark patches of heavily cratered terrain may be ancient icy material formed before the overlying grooved terrain. Below right: From closer still (85,000 km), this area of Ganymede shows a large variety of impact craters of different ages. The brightest craters are the youngest; the ejecta blankets from meteor impacts fade with age. In the center of this mosaic is a bright patch representing rebounding of the floor of the crater. The dirty ice has lost all topography except for faint circular patterns. Curved troughs and ridges marking an ancient enormous impact basin resemble features on Callisto. The basin itself has been destroyed by later geologic processes; only the ring features remain.







LIT PLUMES — Two of Io's active volcanoes (P5 and P6) are highlighted on the satellite's bright limb, spewing materials to a height of about 100 km (62 mi). This photo is one of about 200 which will be used to generate a time-lapse movie of Io's volcanic activity. The photos were taken on July 9 during a ten-hour period just after closest approach to Jupiter, at a range from Io of about 1 million km. The sunlit crescent of Io grew progressively slimmer with advancing night as Voyager 2 moved around to the satellite's dark side.

EXPLOSIVE Io — Of eight active volcanoes sighted in Voyager 1's pictures of Io last March, Voyager 2 had an opportunity to sight seven of them. Of the seven seen by Voyager 2, six are still active, and three are seen here on the limb of the satellite. On the bright limb at left, illuminated by sunlight, are Plume 5 (upper) and Plume 6 (lower), each about 100 km (62 mi) high. On the darker limb at right, illuminated by Jupiter, is Plume 2, about 185 km (115 mi) high and 325 km (200 mi) wide. Plume 2 is about one-and-one-half times larger than it was when it was discovered last March. The first and largest volcano discovered on Io, Plume 1, was not active.

FRONT PAGE:

BRIGHTLY RINGED — Even the people who reprogrammed Voyager 2 to show them clearer pictures of the ring discovered by Voyager 1 last March were surprised at the ring's brightness. The unexpected brightness is probably due to forward scattering of sunlight by small ring particles. In these photos, taken on July 10 about 26 hours after the spacecraft's closest approach to Jupiter, a fainter ring which may extend all the way down to Jupiter's cloud tops can be seen within the inner edge of the brighter outside ring. The outer ring appears to be about 6500 km (4000 mi) wide; Voyager 1 had caught the ring edge-on, leaving scientists unclear at that time as to the ring's structure. Taken on the dark side of Jupiter when Voyager 2 was about 1.5 million km (963,000 mi) from the planet and about 2° below the ring plane, some of the long exposures were blurred by spacecraft motion, especially in the extreme right frame in the lower photo.

BACK PAGE:

CRACKED ICE — Europa, the brightest of Jupiter's Galilean satellites, may have a surface of a thin ice crust overlying water or softer ice with fracture systems appearing as breaks in the crust. Bright linear features (lower center) may be ice welling up to the surface from within. Europa has a density about three times that of water, suggesting it has a large quantity of water. Very few impact craters are visible on the surface, suggesting a continual resurfacing process, perhaps by the production of fresh ice or snow along the cracks, and cold glacier-like flows. Both pictures were taken by Voyager 2 on July 9; the slight offset at the mosaicked edges (center) is due to slight differences in the angles and ranges from which the pictures were taken.