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S/2009 S 1

C. C. Porco, CICLOPS, Space Science Institute, Boulder; and the Cassini Imaging Science Team report the discovery of a satellite orbiting within the outer B ring in Saturn's rings. The satellite was seen in a single Cassini narrow-angle camera image with an exposure time of 820 ms, taken through the clear filter on July 26 (or sixteen days before Saturn's northern vernal equinox on Aug. 11), through the presence of a 36-km long shadow that it cast onto the rings. Its radial distance from the center of Saturn at the time of the observation was measured to be 117000 km. From the length of its shadow and the elevation of the sun at the time of the observation, the distance that the satellite protrudes above the rings was measured to be ≈ 150 m; the inferred diameter of the satellite, assuming an orbit co-planar with the ring material, is consequently ≈ 300 m.

2009 UG$_{89}$

MPEC 2009-U123 announces the discovery by the Mount Lemmon survey of an apparently asteroidal object with a highly elliptical orbit ($e \approx 0.9$) that is retrograde ($i = 131^{\circ}$), currently at $\Delta \approx r \approx 5$ AU (with $q \approx 4.3$ AU in Nov. 2010), from a 3-day arc of observation.

COMETS C/2009 K7–K12 (SOHO)

Further to *IAUC* 9090, additional Kreutz sungrazers have been found on SOHO website images. K. Battams notes that C/2009 K7 was small and perhaps slightly diffuse (peak mag ~ 7.5) in C3 images, but quite diffuse and slightly elongated in C2 images. C/2009 K8 was tiny and stellar in appearance (mag ~ 8.5). C/2009 K9 was slightly diffuse (mag ~ 7) in C3 images, but quite diffuse with a short tail (and a "knot" in the tail) in C2 images. C/2009 K10 was a "very diffuse streak" (mag ~ 7.5). C/2009 K11 was stellar in appearance (mag ~ 6.5) in C3 images, but slightly diffuse and fading very fast in C2 images. C/2009 K12 was diffuse (mag ~ 8).

Comet	2009 UT	α_{2000}	δ_{2000}	Inst.	F	*MPEC*
C/2009 K7	May 20.346	$3^{h}49^{m}.1$	$+17^{\circ}27'$	C3/2	BZ	2009-N50
C/2009 K8	24.254	4 05.0	+19 04	C2	MK	2009-N50
C/2009 K9	26.988	4 18.1	+18 31	C3/2	MU	2009-N50
C/2009 K10	27.938	4 18.6	+19 39	C2	MU	2009-N50
C/2009 K11	29.221	4 24.2	+18 14	C3/2	MU	2009-O18
C/2009 K12	30.397	4 28.0	+20 02	C2	MK	2009-O18

  Daniel W. E. Green