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R/2006 S 5 AND R/2007 S 1

C. C. Porco, CICLOPS, Space Science Institute, Boulder, on behalf of the Cassini Imaging Team, reports the detection of a ring arc (designated R/2007 S 1) associated with the small satellite Saturn XLIX (Anthe; semi-major axis 197655 km; cf. *IAUCs* 8857, 8873), and the apparent confirmation of a previously reported ring arc R/2006 S 5 (*IAUC* 8773) associated with the satellite Saturn XXXII (Methone; semi-major axis 194230 km; *IAUCs* 8389, 8471). The ring arc in the orbit of Anthe was detected in a series of five 15-s-exposure recovery images of Anthe taken with the Narrow Angle Camera of the Cassini Imaging Science Subsystem on 2007 Oct. 29 at a phase angle of 23°. The satellite appears to be embedded in the arc but is drifting slowly with respect to it. The Anthe arc extends over $\sim 20°$ in longitude and appears to be associated with material trapped in the 11:10 co-rotation eccentricity resonance with Saturn I (Mimas). Furthermore, additional detections of the Anthe arc between 2008 February and July show that the satellite's motion with respect to the arc is consistent with Anthe's $\pm 7°$ libration in the same 11:10 resonance, suggesting that Anthe is the likely source of the arc material, and also that it may be creating structure within the arc. The earliest detection of the Anthe arc was on 2007 June 15. Serendipitously, the discovery image of the Anthe arc also revealed that the satellite Methone is embedded in an arc of material with a longitudinal extent of $\sim 10°$, which may be associated with the 15:14 corotation eccentricity resonance with Mimas. Additional detections of the arc were made in 2008 Feb.–Apr.; the earliest detection was on 2007 May 31. The observed Methone arc could help to explain data from the LEMMS sensor of the Cassini Magnetospheric Imaging Instrument that led to the detection of R/2006 S 5 (*IAUC* 8773).

COMET P/2008 Q4 (LONEOS)

M. Jäger, Stixendorf, Austria, reports his recovery of comet P/2001 R1 (cf. *IAUC* 7713) with a small coma ($< 20''$) and a $3'$ tail in p.a. 275° on CCD images taken with a 0.20-m reflector; astrometry by W. Vollmann:

2008 UT	α_{2000}	δ_{2000}	Mag.
Aug. 31.08719	$7^h39^m31^s.16$	$+25°12'23''.9$	16.5

New astrometry, revised orbital elements (the indicated correction to the prediction on *MPC* 54169 is $\Delta T = -0.42$ day), and an ephemeris appear on *MPEC* 2008-R09.

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