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PERIODIC COMET SHOEMAKER-LEVY 9 (1993e)

Z. Sekanina, P. W. Chodas and D. K. Yeomans, Jet Propulsion Laboratory, communicate: "Between July 22 and at least the last week of September Jupiter will be bombarded by the debris that populated the comet's west-southwestern trail. Between July 27 and Sept. 22 the impact sites will be located on the planet's near side as viewed from the earth. The collisions will occur at a decreasing pace both in terms of the event rate and the characteristic size of the individual particulates. We estimate that this debris consists of centimeter- to subkilometer-sized fragments, so that explosive phenomena triggered by the impact events will be much less powerful than those associated with impacts of the major fragments. Yet, searches for both possible individual events and any collective effects are encouraged. Our model predicts that the jovicentric latitude of the impacts will vary from -44 deg in late July to +42 deg in late September. The earth-Jupiter-impact site angle will reach its minimum of 69 deg on Sept. 3, at which time the impact geometry will be the most favorable for earth-based observers. All impacts will be near Jupiter's morning (eastern) limb. After Sept. 22 the impact sites move back to the far side, but by that time the impact rate will have diminished considerably and Jupiter will be approaching conjunction with the sun."

Z. Pujic, University of Queensland, Brisbane, reports that ten observers mainly using a 0.32-m reflector (383 x) independently noted the K impact plume, 5" high x 3" wide, visually for 10 min beginning July 19.437 UT; three observers had independently noted the G impact plume, 8" high x 5" wide, visually for 10 min beginning July 18.321. After July 19.463 an indentation was visible at the K site, and a dark spot gradually appeared at the center of this feature; well on to Jupiter's disk by July 19.483, the spot was then seen to be surrounded by a collar of dark matter.

Early reports via the SL9 message center of the impact of fragment L = 11 included a detection of the plume by M. Skrutskie and S. Aas with the NICMASS infrared camera at the University of Massachusetts on July 19.928 UT at 2.23-2.29 microns. The Calar Alto Observing Team (cf. IAUC 6023) first detected the impact at 2.3 microns on July 19.926; rapid brightening occurred after 19.928, and by 19.929 the L site was six times brighter than the K site at that time. O. L. Chaves saw the plume visually with the 0.46-m refractor at the Observatorio Nacional at Rio de Janeiro on July 19.933, reaching its maximum extent on 19.935.

1994 July 19 **(6029)** **Brian G. Marsden**