compound that persistently appears in cometary ultraviolet spectra and, therefore, seems to play a key role in sulfur photochemistry in cometary comae - and the nitrogen monosulfide (NS) - the first cometary molecular species to contain both nitrogen and sulfur atoms - which was recently observed by Irvine et al. (2000) in comet Hale-Bopp. The determination of the abundance of each such species helps to constrain the chemistry and physics of comets and hence their place and mode of origin in the nucleus. With this purpose in mind we have developed a multifluid chemical model of cometary comae (Boice 1990) with gas-phase chemical kinetics and gas dynamics to predict molecular abundances variation in a sensitive manner with cometocentric distances at a heliocentric distance of 1 AU to study the abundances of CS and NS, using a detailed photo and chemical reaction network with more than 100 species and over 1000 reactions. We conclude that the CS abundances in comets does not seem to vary much with the cometocentric distance. In particular, if NS is the daughter of an unknown long-lived parent molecular species, its production rate and abundance should be much larger than the obtained values.

PAINEL 225

BRAZILIAN ASTROBLEMES AND SIMILAR STRUCTURES

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Brazil shows several ring features resembling meteoritical craters, after a bibliographical research we presented bellow the better known structures: Araguainha Dome 15º35'S 42º49'W; diameter: 30 km; age: 235 m.y. Serra da Cangalha 8º04'S 35º42'W; diameter: 12 km; age: < 300 m.y. Vargeão - 25º40'S 42º10'W; diameter: 11 km; age: 116 (+ ou -) 16 m.y Riachão: 6º35'S 35º39'W; diameter: 3 km; age: < 200 m.a. São Miguel do Tapuio 4º38'S 31º23'W; diameter: about 20 km; age: < 120 m.y. Besides these five impact craters, there are the following geological features, that need more evidences of shock metamorphism in order to be accepted as meteoritical craters: Colônia 23º 38'E 35º 32'W; diameter: 3 km; age: < 80 m.y. Inajah: 8º30'S 41º 0'W; diameter: 5 km; age: unknown. Jarau: 45º 33'W 30º12'S; diameter: 4.4 km; age: 116 (+ ou -) 16 m.y. Piratininga: 22º 30'S 39º10'W; diameter: 12 km; age: 116 (+ ou -) 16 m.y. Several others circular features visible on satellite or airplane image were also identified, but were not studied indeed.

PAINEL 226

STUDY OF STRONG METEOR SHOWER PROPERTIES AND THEIR INFLUENCE ON THE IONOSPHERE

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We analyze the data of seven strong meteor showers obtained from the SKYiMET radar (INPE - Cachoeira Paulista, Brazil) operating at 34.7 MHz. The meteor data were obtained during the years 1999-2001. Properties of these showers such as the influx as a function of the altitude and time (for more than 1,800 meteors daily including non-shower meteors), the velocity distributions (from 10 to 65 km/s, including non-shower meteors), the life-time distributions (around tenth of a second, including non-shower meteors) and their radiant positions are determined. Information about the variability of Total Electron Content (TEC) in the ionosphere was derived from the Global Positioning System (GPS) satellite network during the period of the meteor showers for 1999 and 2000. From these data we investigate whether meteor showers have any significant impact on the upper atmosphere (above 80 km).

PAINEL 227

ON LONG TERM EVOLUTION OF STELLAR "OORT CLOUDS"

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Several catalogues are now avaliable allowing us to foresee the velocity vector of many nearby stars in a reasonable surrounding volume. With this we may study close stellar passage statistics and also their consequences over structures of planetary systems that are more exposed to external perturbations, that is, the "Oort Cloud" and, possibly, the external part of the "Kuiper Belt". Using this statistics, we perform several direct numerical integrations over all possible "Oort Clouds" around stars in order to understand their long term dynamical evolutions and also their longevities. In order to take in account real cases with more than single stars, we also suppose "Oort Clouds" around binary and multiple stars systems. We take, as an example of binary and multiple stars systems, the parameters of α Centaury A and B, as binary, and include Proxima Centaury to simulate multiple star systems. Our preliminary conclusions are that: if the binary is not too wide, then the existence and the evolution of the stellar "Oort Cloud" will not differ a lot from the single stars; but if the system is