Earth, Moon and Planets 2005 vol.95 N1-4, pages 165-179

Associations of meteor microshowers or as the Kazan radar "SEES" radiants on northern celestial hemisphere

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Abstract

The discrete quasitomographic method of the analysis of the interferometric data of meteor radar gives us the possibility of measuring coordinates and velocities of very weak meteor showers with a 2 × 2 square degree resolution on the celestial sphere. The minimal rate of the meteors in each microstream is five meteors per day. At such sensitivity, basic distinctions between irregularities of the sporadic background and meteor streams vanish. More than 1000 of the detected microshowers per month are associated with a combination of (a) the large known meteor showers, (b) the weaker known meteor showers and (c) till now unknown associations of microshowers. All microshowers regardless of association have the identical velocities, limited areas of radiation and near simultaneity of their acting dates. The results are compiled as maps of radiant distribution and average velocities of microstreams for different months. From these it is possible to see how the microshower activity for various discrete sites on the celestial sphere correlate with the behavior of the well-known meteor streams and thus to infer the orbital properties of the different microstream configurations. © Springer Science+Business Media, Inc. 2005.

http://dx.doi.org/10.1007/s11038-005-2245-3

Keywords

Celestial shere, Meteor shower, Microshowers, Radar measurements