



In Situ Measurements of Meteoric Ions, Chapter 8

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BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 32 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. Metal ions found in the atmosphere above 60 km are the result of incoming meteoroid atmospheric ablation. Layers of metal ions are detected by sounding rocket in situ mass spectrometric sampling in the 80 to 130 km region, which coincides with the altitude region where meteors are observed. Enhancements of metal ion concentrations occur during meteor showers. Even outside of shower periods, the metal ion altitude profiles vary from measurement to measurement. Double layers are frequent at middle latitudes. More than 40 different meteoric atomic and molecular ions, including isotopes, have been detected. Atmospheric metal ions on average have an abundance that matches chondritic material, the same composition as the early solar system. However there are frequently local departures from this composition due to differential ablation, species dependent chemistry and mass dependent ion transport. Metal ions react with atmospheric O₂, O, O₃, H₂O and H₂O₂ to form oxygenated and hydrogenated ionic compounds. Metal atomic ions at high altitudes have long lifetimes. As a result, these ions, in the presence of Earth's magnetic field, are transported over long distances by upper atmospheric...



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