

Monday, July 23, 2018
**SPECIAL SESSION: EVOLUTION OF THE SOLAR NEBULAR:
 ORIGIN OF THE MOON AND PLANETS**
 3:30 p.m. Red Room

Chairs: Erik Galimov
 Conel Alexander

- 3:30 p.m. Galimov E. M. *
[Geochemical Implimentation of the Formation of the Earth-Moon System by way of Fragmentation of the Original Gas-Dust Cloud](#) [#6029]
 We have shown that the Earth and the Moon could have formed by fragmentation of a common massive gas-particle body (a cloud).
- 3:45 p.m. Krivtsov A. M. * Murachev A. S. Tsvetkov D. V.
[Modelling of the Solar System Early Stages Evolution for Determining Conditions of the Earth-Moon System Formation](#) [#6365]
 The concept of Earth-Moon formation has described evolution of the Earth-Moon system after it originated from a planetary sized gas-dust cloud. Current research is devoted to determining conditions for the formation of such gas-dust cloud in the process of the early solar system evolution.
- 4:00 p.m. Ipatov S. I. *
[Formation and Growth of the Embryos of the Earth and the Moon](#) [#6024]
 The embryos of the Earth and the Moon could form as a result of contraction of the same parental rarefied condensation. The Moon embryo grew by accumulation of iron-depleted material ejected from the Earth and by direct accumulation of planetesimals.
- 4:15 p.m. Menshov I. S. * Zhukov V. T. Legkostupov M. S. Pliner L. A.
 Dolgoleva G. V. Zabrodina E. A.
[On Gravitational Instability of the Sun's Protoplanetary Disk](#) [#6017]
 Results demonstrate that the Sun's protoplanetary disk was likely gravitationally unstable at the initial stage of evolution with regard to large-scale perturbations with a wavelength comparable to the distance between planets.
- 4:30 p.m. Scott E. R. D. * Krot A. N. Sanders I. S.
[Nebular History of Differentiated and Chondritic Planetesimals](#) [#6168]
 Whole rock D¹⁷O values and nucleosynthetic isotopic variations in Cr, Ti, Ni, and Mo, in meteorites provide a new window into the nebular history and origin of planetesimals, planets, and chondrules.
- 4:45 p.m. Alexander C. M. O'D. *
[Quantitative Modeling of the Elemental and Isotopic Fractionations in Chondrites](#) [#6074]
 A quantitative model is presented that is able to reproduce the elemental and isotopic fractionations amongst the chondrite groups.
- 5:00 p.m. Sikdar J. * Rai V. K.
[Si and Mg Isotopes in Enstatite Chondrites and the Evolution of Inner Solar Nebula](#) [#6352]
 The abstract summarizes high precision Si and Mg isotope data from micro-milled components (silicate, metal, and matrices) of reduced enstatite chondrite. In context of these results, the latest understanding on the origin and differentiation of Earth will be discussed.
- 5:15 p.m. Kronrod E. V. * Kuskov O. L. Kronrod V. A.
[Thermo-Chemical Constraints on the Lunar Bulk Composition and the Structure of the Three-Layer Mantle](#) [#6031]
 We evaluate the lunar bulk composition and the composition of the three-layer mantle based on a joint inversion of lunar mass and moment of inertia, and the mantle seismic velocity profiles in combination with Gibbs free energy minimization.