**Tuesday, April 25, 2017**
**EXOPLANETS: HABITABILITY:**
**IONIZING RADIATION AS A CONSTRAINT ON HABITABILITY**
**10:15 a.m. Arizona Ballroom A-C**

**Chairs:** **Brian Thomas**
**Reggie Hudson**

10:15 a.m. Fields B. D. *
*When Stars Attack! Evidence for a Near-Earth Supernova Explosion in the Geological, Astronomical, and Lunar Records* **[#3684]**
A wide array of evidence shows that one or more massive stars exploded nearby in the last few Myr, creating ionizing radiation potentially hazardous to life.

10:30 a.m. Thomas B. C. * Melott A. L. Overholt A. C. Kachelries M. Simikoz D. V. Engler E. E.
*Effects of Nearby Supernovae in the Early Pleistocene* **[#3056]**
I will review work recently published by our group and new work in progress, in which we model effects on Earth by supernovae at 300 and 150 light years.

10:45 a.m. Overholt A. C. *
*Cosmogenic Secondary Radiation from Nearby Supernovae* **[#3120]**
Modeling the increase in ionizing radiation background due to cosmogenic secondaries (muons and neutrons) after a nearby supernova.

11:00 a.m. Melott A. L. *
*Cosmic Explosions, Molecular Clocks, and Terrestrial Fires* **[#3001]**
Recent supernovae within 100 pc of the Earth may account for an episodic increase in fires as well as the disparity between molecular and fossil clocks.

11:15 a.m. Atri D. *
*Astrobiological Implications of Astrophysical Ionizing Radiation on Exoplanetary Atmospheres, Surface and Subsurface Environments* **[#3394]**
Astrophysical ionizing radiation can create conditions which can be favorable (radiolysis) and unfavorable (radiation dose) to potential biospheres on exoplanets.

11:30 a.m. Kobayashi K. * Aoki R. Abe H. Kebukawa Y. Shibata H. Yoshida S. Fukuda H. Kondo K. Oguri Y. Airapetian V. S.
*Formation of Amino Acid Precursors in Primitive Planetary Atmosphere by Galactic and Solar/Stellar Cosmic Rays* **[#3259]**
Possible roles of cosmic rays in amino acid formation were examined. Stellar energetic particle events might have been essential for generation of life.

11:45 a.m. Gerakines P. A. * Smith K. E.
*Destruction of Pyridine by Proton Irradiation in Low-Temperature $H_2O$ and $CO_2$ Ices* **[#3659]**
Rate constants for pyridine destruction in $H_2O$- and $CO_2$-dominated ices were measured in situ with infrared spectroscopy at temperatures from 20 to 100 K.

12:00 p.m. Gudipati M. S. * Henderson B. L. Bateman F. Kang S. Garrett H. B.
*On the Near Surface Habitability of Europa's Trailing Hemisphere* **[#3353]**
We present studies that simulate realistic Europaean conditions: How radiation determines the fate of organic molecules beneath ice layers beneath the surface.

12:15 p.m. *Lunch*