Minutes from the November 3 Meeting of the CCAS

Tonight's speaker is Chat Hull, Carl G. Jansky Fellow with the
Harvard-Smithsonian Center for Astrophysics

"Star Formation Through Radio Eyes"
Radio Astronomy using the electrical magnetic spectrum is able to sift through interstellar dust and molecules to view star formation within.

Variations of Radio Telescopes
Angular resolution and diffraction limit
Single dish vs. multi-dish arrays
Polarization with CARMA (Combined Array for Research in Millimeter-wave Astronomy) and ALMA (Atacama Large Millimeter/Submillimeter Array.
TADPOL (Telescope Array Doing Polarization) observes the hourglass like magnetic field in the dust around the star formation.

Long wavelengths are less affected by small particles.
Different methods to observe:
Optical image → Infrared →Mid Infrared → Long Infrared → Radio Waves

Radio astronomers have analyzed cloud molecular levels to be mostly Hydrogen, 25% Helium and over 120 now known trace molecules.

Different specifications of arrays:
Angular Resolution:
Viewing the solar system from 400 light years away, Saturn's orbit would be like looking at a dime from 15 miles away.

Multi-dish Cross-correlative aperture synthesis telescope works as though it's more than a mile wide dish.
Long baseline interferometry is used with huge arrays in California, the Virgin Islands, worldwide.

1.Very Large Array in the Plains of San Augustin, New Mexico
2.CARMA in Cedar Flat near Bishop, CA
3.ALMA, located on the Chile Plateau. Spans a distance of 10 miles with random patterning of dishes

Five institutions collaborated on CARMA. Observations were done in stop motion, updated position every fifteen minutes.

He mentioned that these arrays yield vast data sets, and that the public can be an enormous help sifting through the findings.
Citizens Science is an effective way of outsourcing the data analysis. Sites such as Radio Galaxy Zoo allows people to work from home. He compared this to the next generation

of the SETI project, in which amateur astronomers and regular people could help observe the signals. People now are actively participating in such projects.

He finished by saying, "Despite budget cuts, the future of astronomy is bright at millimeter wavelengths."

Business Meeting:

On November 14, the full moon this month will be a Super Moon, an impressive 7% larger in arc angle. The next such occurrence won't be until 2035.

Bernie Young mentioned the Northern Taurids would peak tonight and tomorrow (Nov 3 & 4) and the Southern Taurids would peak at the end of the month.

He also talked about working with honor students. Twenty students will be working on twelve possible projects (listed in the First Light). Some work will begin at the star party planned for Saturday, November 5.

Jim Lynch asked for people to sign up to help on various committees: the CCAS website, First Light newsletter, education & outreach/communications/PR.

Member Bernie Young will be the speaker for the December 1 meeting.

Meeting was adjourned at 9:20 p.m.

Respectfully submitted by Christine M. Lynch