

The status of activities as of September 2016 on the study group 1.11 on Comparative Climatology:

1. The second meeting of Comparative Climates of Terrestrial Planets (CCTP2) took place during September 8-11, 2015 at the NASA Ames Research Center, Mofett Field, CA. The meeting brought together researchers that study terrestrial climate from a variety of perspectives, including Earth's climate history and future, the climates of solar system worlds, interactions of the Sun with its planets, and the diversity of exoplanet climates. The primary take-home points from this meeting were that 1) the climate of terrestrial worlds is a function of the intersections of surface, interior, space, and life processes, and 2) to best understand these intersections, we should leverage lessons learned from all these planets regardless of the artificial barriers.

A third CCTP meeting is being planned to be held during late 2017 or early 2018. CCTP3 committee will soon start their work to put the program together and define the venue.

2. CCTP steering committee will work with NASA Analysis Groups (AGs), COSPAR, and IAA organizational elements. (ON-GOING)

3. A key recommendation relevant to meeting the IAA objectives from the international assembly of scientists at the CCTP1 conference was that there is a need for a long-term, continuous, observation/measurement of the solar system's terrestrial planets. Climate is a planetary-wide phenomenon, and a deeper understanding is possible by continuously observing the other examples in the solar system. CCTP can move forward with NASA's continuing support for planetary observations using orbiting telescopes, high altitude balloons, and sounding rockets. [STRATEGIC DIALOGUES REQUIRED BETWEEN RESEARCH INSTITUTIONS AND ALSO SPACE AGENCIES, IN COSPAR, IAA CLIMATE CONFERENCE AND OTHER VENUES](#) (completed via CCTP2)

4. A detailed review on the following topics is being taken up:

- Evolutionary theory of terrestrial planets and giant planets, General (or unified) evolutionary theory for planets including exoplanets: What is the status?
- Timeline of Evolution of terrestrial planets, giant planets
- Composition of the planetary atmosphere- what are the factors responsible, what is current understanding about all planetary bodies
- Energy budget of planets
- Solar variability and its affect on the climate of planets

Currently a review on "current understanding of the temperature state of planetary bodies" is nearing completion ([Review report to be completed by March 2017](#)).

5. Following CCTP2 conference, the outcome of the conference will be absorbed in the activity based on the deliberations at the CCTP2. (In progress)

6. Areas of activities that need to be considered in the Comparative Climate research, with participation of developing countries, are:

- a. short term variables for comparative climatology : This could include ground based campaign for measurements that could be folding into models and satellite data.
- b. Regional variables for comparative climatology; such as the measurement of different spectral radiance.
- c. Development of cubesat concepts for comparative climatology observations.

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