

# Earth Venture Continuity - 1 Update

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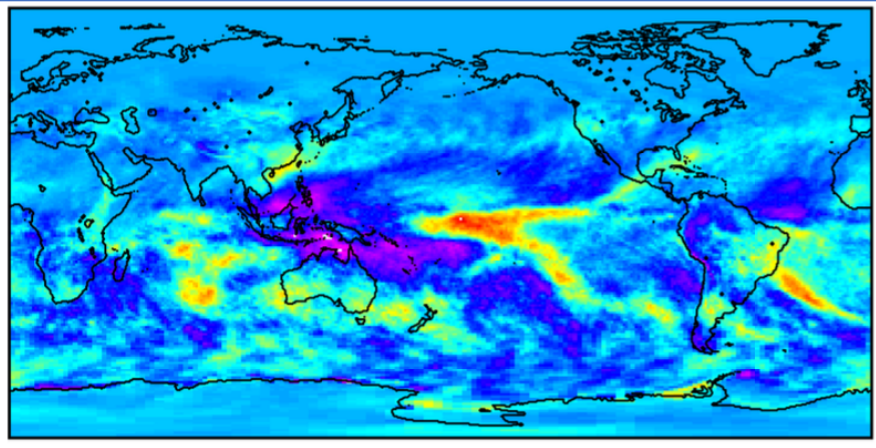
## The Road to Earth Venture Continuity

- 2017 Decadal Survey recommends a new line of small (Earth Venture Class) **low cost, cost capped, PI-led** missions
  - Intended to provide mechanism to continue critical measurements without taxing new measurements.
- ESD cancelled RBI January 2018 due to cost and schedule overruns.
  - RBI was part of DS “Program of Record,” recommended implementing.
- ESD creates “Earth Venture Continuity” (EVC) program.
- ESD has chosen the first (EVC-1) mission to be Earth radiation budget.
  - EV missions are solicited as Announcements of Opportunity.
  - AO will be released as a Program Element Appendix (PEA) of the Stand-Alone Missions of Opportunity – V3 (SALMON-3) solicitation.
- ESD forms Earth Radiation Budget Science Working Group (SWG) to provide recommended characteristics for a continuity-preserving instrument.

## Current EVC-1 Schedule

- ERB Science Working Group Completes Recommendations: Sep 2018
- Draft AO released for for community comments: Oct 2018
- EVC-1 Prospective Bidders Web-Conference: Oct 2018
- Community Comment due date: Nov 2018
- Release of AO/SALMON-3 PEA: Dec 2018
- EVC-1 Preproposal Web-Conference: Jan 2019
- Notices Of Intent (NOI) due: Mar 2019
- Proposals due: May 2019
- Evaluation: Jun 2019 -Sept 19
- Categorization Committee Meeting: Sep 2019
- Steering Committee Meeting: Oct 2019
- Selection Announcement: January 2020
- Instrument Delivery: 1 Jan 2025 or NLT 1 Jan 2027 for Full Mission

*RECOMMENDED MEASUREMENT AND  
INSTRUMENT CHARACTERISTICS FOR  
AN EARTH VENTURE CONTINUITY  
EARTH RADIATION BUDGET  
INSTRUMENT*



National Aeronautics and Space Administration

- Science Working Group formed February, 2018.
- Working Group consisted entirely of civil servants to avoid Federal Advisory Committee Act rules given time constraints.
  - 22 NASA and NOAA CS personnel.
- Goal of SWG to recommend instrument and measurement characteristics for a continuity-preserving instrument, within cost cap.
- Recommended solution was basically FM6, maybe with reduced scanning capability. (Cross track, with azimuthal rotation capability for lunar/solar calibration.)
- **Note: recommendations are not AO requirements!**
- SWG met periodically from February to August.
- First draft July 2018 published for public comment.
- Comments informed final draft.
- Final draft is complete.
- Final draft will be made available on NASA web site, and referenced in AO.

## General ESD Approach to EVC

- ESD will use EVC to **demonstrate** a technique/approach for making long-term measurements with the appropriate characteristics (a “continuity demonstration.”)
- Review criteria for selecting an EVC project:
  - Capability of the instrument/characteristics of the data (can it provide continuity? To what extent?)
  - Cost of future copies (long term solution vs one-off).
  - Accommodatability (ease of placing on host platform).
  - Producability (ease of production – reduce potential cost inflation.)
  - Ease of technology infusion (ability to improve future copies)
- Payload Classification will be Class C or D
- EVC will NOT address continuity beyond the demonstration
- Minimum demonstration period is 1 year beyond on-orbit commissioning
- Additional on-orbit acquisition will not be under the cost cap
- The ESD objective will be to fly 3 EVC missions in the decade

# Types of Missions Solicited Under EVC

- DS envisioned EVC to be similar to the EVM strand, including full mission implementation costs whether for instruments, spacecraft, and launch vehicles OR hosted payloads with hosting services included.
- ESD will exercise flexibility to implement any of the following arrangements for EVC:
  - Full mission implementation – like CYGNSS.
  - PI arranged instrument hosting – like GeoCarb.
  - NASA provided hosting for a MOO – like TEMPO or MAIA
    - For EVC-1, NASA will facilitate putting instrument on JPSS-3.
      - Note JPSS-3 currently has an early LRD – 2024, with instrument delivery date of 2021 – AO requirements will ignore this.
      - JPSS-2 launch date has slipped into 2023.
      - Idea of JPSS LRD is to have a “hot spare” in case of JPSS-2 failure.
- ESD may allow ALL of these implementations in a single AO - PI's choice.

## **EVC-1 AO Characteristics**

- **Cost capped at \$150M (PI managed mission costs – PIMMC).**
  - **If estimated cost to complete exceeds cap, termination is initiated**
- Solicitation targeted for radiation budget science capability
- One-step solicitation process (solicitation, proposal, evaluation, selection)
  - Evaluation consists of 1. Science panel, and 2. Technical, Management, Cost panel conducted by SOMA (Science Office for Mission Assessments)
- All RBI hardware will be offered in AO as government furnished equipment (GFE)
- EVC-1 will be a Class C payload
- EVC-1 will have a mission duration requirement appropriate for radiation budget continuity
  - This is specific to EVC-1 and not precedent setting, as the primary objective of EVC is to demonstrate a technique/approach for making long-term measurements rather than providing a mechanism for actually acquiring the measurements over the long term
- Solicitation to be released by December 2018
- Draft solicitation to be released for community comments