

TDAMM SIG

Time-Domain And MultiMessenger Science Interest Group

- New Messengers and New Physics was one of the three themes of Pathways to Discovery in Astronomy and Astrophysics for the 2020s, with New Windows on the Dynamic Universe as the priority area this decade
- Time-Domain And MultiMessenger (TDAMM) is the NASA acronym to capture this priority area
- NASA Astrophysics has three Program Analysis Groups (PAGs) which operate in different areas of the field. TDAMM crosses these areas. Science Interest Groups (SIGs) are focused groups under the PAGs
- TDAMM SIG is set up as an organizational venue. It is a Cross-PAG SIG
 - **Physics of the Cosmos** - Eric Burns, Rebekah Hounsell
 - **Cosmic Origins** - Brad Cenko
 - **Exoplanet Exploration** - Ian Crossfield

TDAMM SIG Tasks

1. **Provide analysis and feedback to NASA** on the impact of the Astronomy & Astrophysics Decadal Survey on the subfield.
2. **Identify and articulate “science gaps”**: gaps between the current state of knowledge in the subfield and the goals outlined by the Decadal Survey that require new data in order to fully define new missions (precursor gaps), prepare for approved missions that are in development (preparatory gaps), and maximize the science return from current missions (follow-up gaps).
3. Serve as ambassadors to **facilitate communications between NASA and the science community**. In particular, act as the interface to relevant TDAMM communities outside NASA’s immediate sphere, e.g., ground-based observers, physics facilities.
4. Engage in scientific discussions and exchange of ideas through meetings and seminars to **make best use of NASA assets for current research and to assist NASA in strategic planning in TDAMM activities**.
5. **Propose and organize TDAMM sessions at conferences and arrange other public meetings as appropriate**.
6. **Establish and disseminate best practices for conducting TDAMM science**, for missions both in development and in operations, and for observers and investigators, including in regards to sharing and citing data in an era of open data.
7. **Proposing of Science Analysis Groups**.

TDAMM Science Analysis Groups (SAGs)

- SAGs deliver findings to NASA on a predefined topic and have finite lifetimes
- TDAMM SAGs
 - Gamma-ray Transient Network SAG - Chairs: Eric Burns, Michael Coughlin; done
 - TDAMM Communications SAG - Chairs: Jamie Kennea, Judith Racusin; in progress
- **Possible** additional TDAMM SAGs
 - TDAMM Roadmap SAG - find programmatic improvements to existing and selected missions, funding calls, and cross-agency work. Identify specific mission needs as a priority for this decade
 - TDAMM Sociological SAG - find ways to improve the state of the field with respect to DEIA principles, work-life balance, and proper credit sharing to facilitate greater scientific return
 - Are there other SAGs that we should consider? Let us know in the discussion time or in future meetings

TDAMM SIG Meetings

- Kick-off meeting at January 2024 AAS
 - Roman
 - ULTRASAT
 - NEO Surveyor
 - Discussion

TDAMM SIG Meetings

- Q&A with Astro2020 Co-Chair Fiona Harrison regarding TDAMM recommendations
 - <https://pcos.gsfc.nasa.gov/sigs/tdamm-sig/events/meetings/01-Mar-2024/01-Mar-2024.php>

Time Domain Astrophysics Program (Highest Priority Sustaining Activity for Space)

Exploring the cosmos in the multi-messenger and time domains is a key scientific priority for the coming decade, with new capabilities for discovery on the horizon with the Rubin Observatory, Roman, LIGO/Virgo and the Kamioka Gravitational Wave Detector (KAGRA), and IceCube. To advance this science, it is essential to maintain and expand space-based time-domain and follow up facilities in space. Many of the necessary observational capabilities can be realized on Explorer-scale platforms, or possibly somewhat larger. As the international landscape and health of NASA assets change, it will be important for NASA to seek regular advice over the coming decade on needed capabilities and to ensure their development. The open Explorer program calls have reached a healthy funding level, and as noted in Section 6.2.1.1.3, maintaining the current cadence of open calls is a condition for new initiatives. This time-domain program is therefore recommended as an augmentation to those levels, and would be executed through competed calls in broad, identified areas.

TDAMM SIG

- We need your input!



Email signup instructions



Webpage