



LISA Consortium Astrophysics Working Group

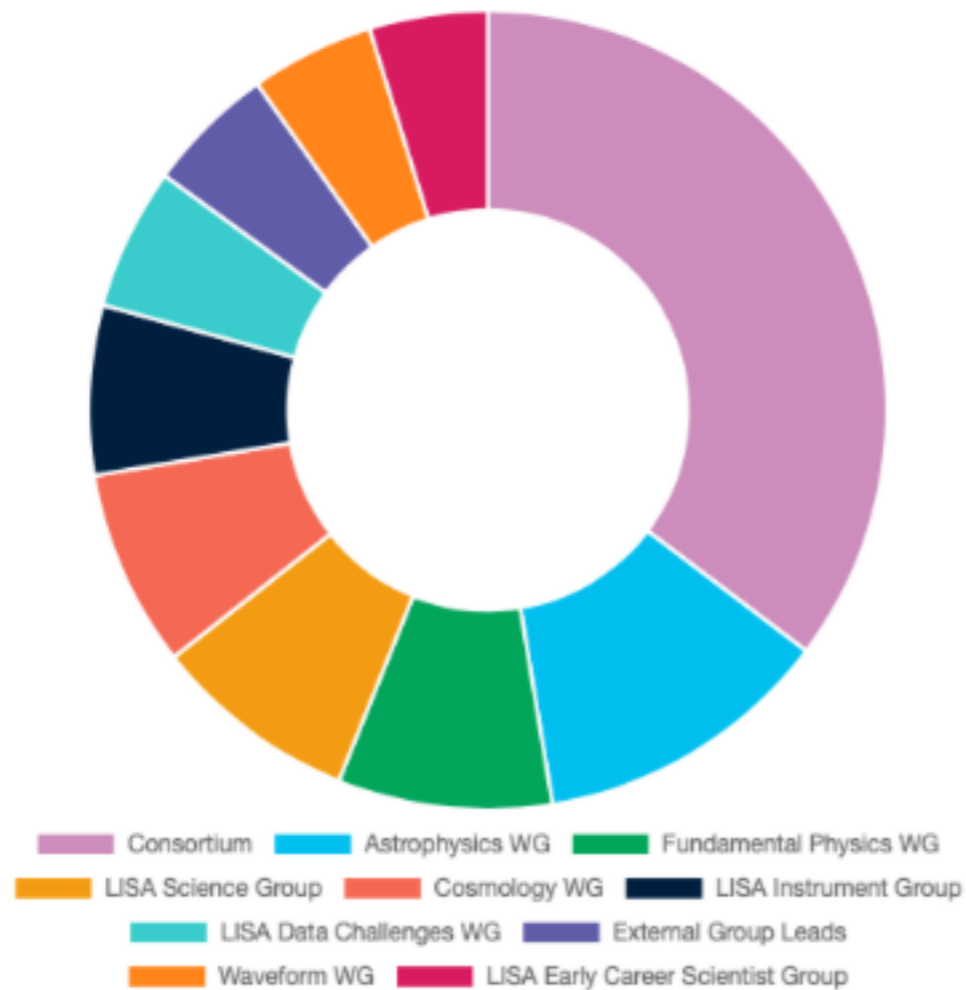
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LISA Canada Meeting
Virtual — 27 April 2021



Astrophysics Working Group

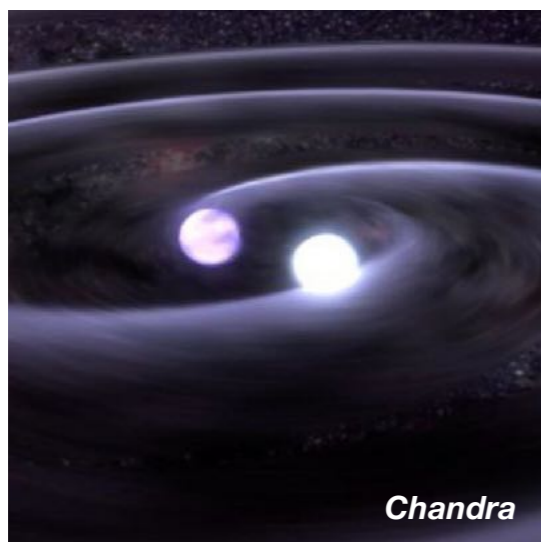
- **Current Membership:** 481 (Largest Consortium Working Group)
- **Current Chairs:** Marta Volonteri, Gijs Nelemans, Lucio Mayer, Shane Larson



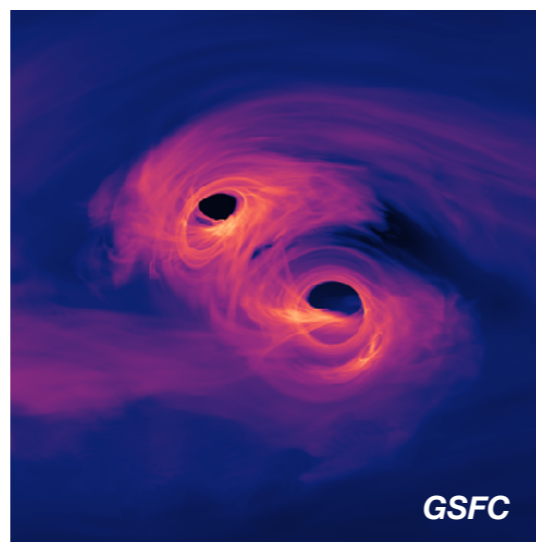
Astrophysics Working Group

- ***Foster work and collaboration on astrophysical problems relevant to any question LISA can address***
 - Strengthen community of astrophysicists working on LISA
 - Provide expertise to the Consortium
- ***Open ended: source characterization, origin & evolution of sources, populations, imprints of astrophysical processes, ...***
 - Any science that can be addressed with LISA data, using a variety of techniques (computation, theory, current observations, ...)

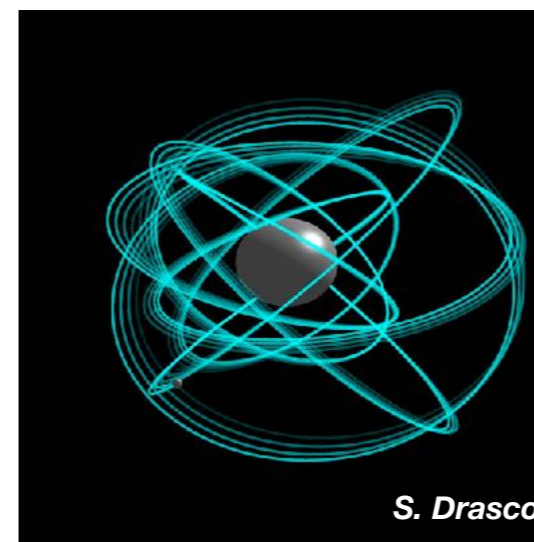
Ultra-compact Binaries



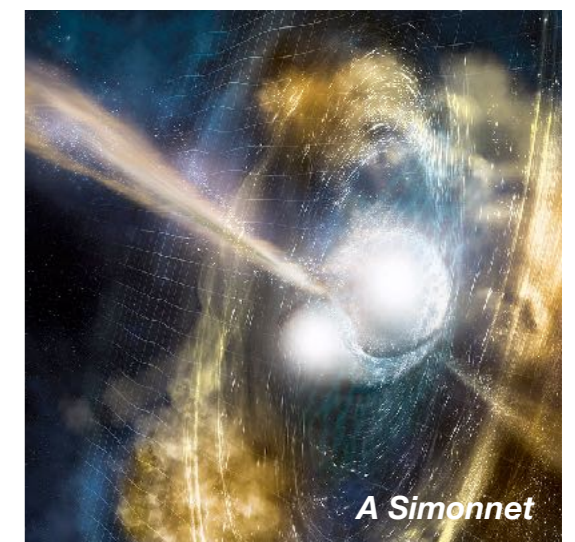
Massive Black Hole Binaries



EMRI/IMRI

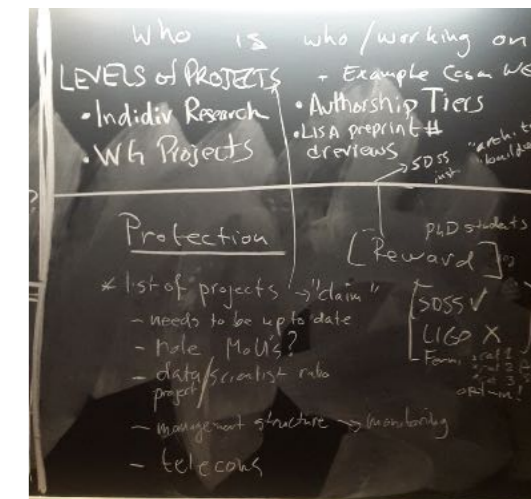
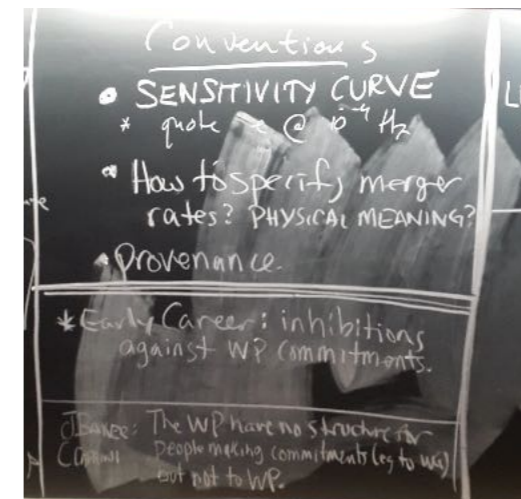
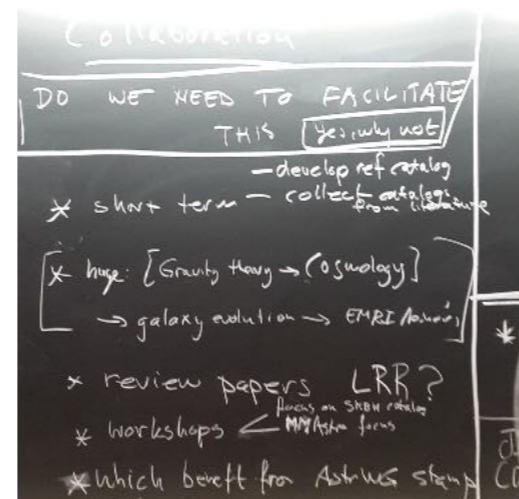
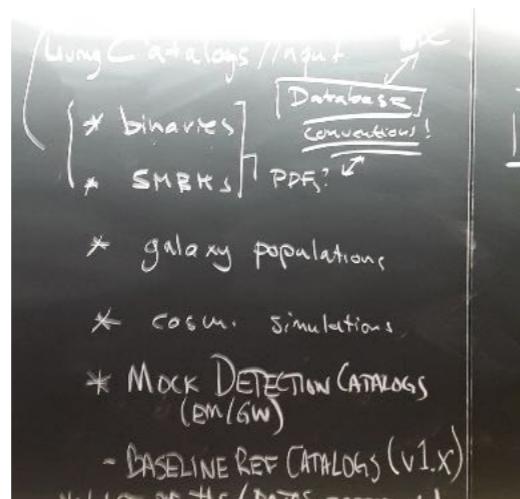
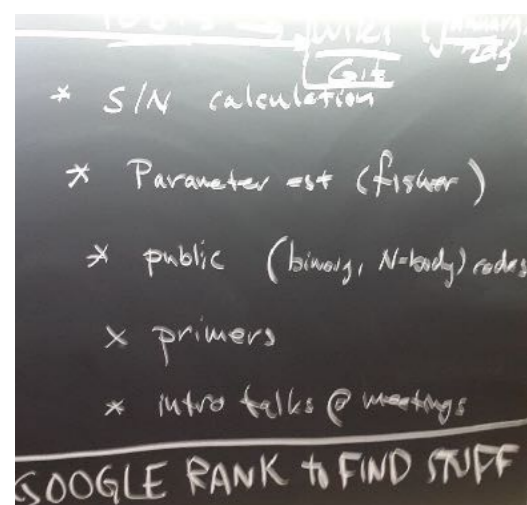


Multi-messenger



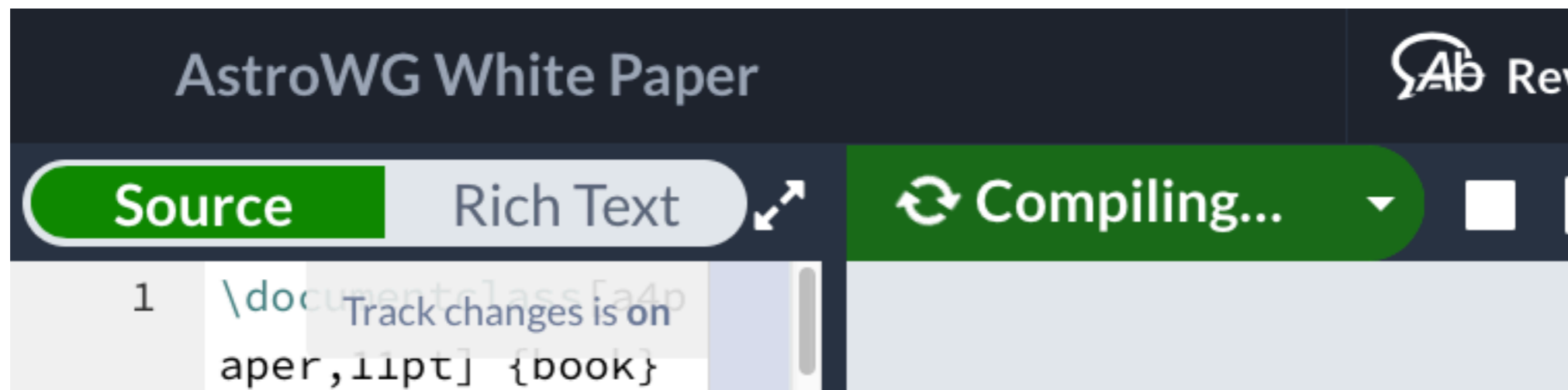
Working Group Meetings

- **Meetings at regular Consortium Meetings**
- **Face-to-face meetings ~ 1 year intervals**
 - **Dec 2018:** IAP Paris; **Mar 2020:** Hybrid Radboud; **June 2021:** Virtual (UZH)
- Science talks, orientation and Consortium Updates, Project Launches
 - 2020 — White Paper kickoff
 - 2021 — Expected Working Group Projects kickoff



White Paper

- ***Capture the current state of LISA astrophysics***
- Three writing teams, focused on high level topical sources
 - Stellar Mass Multiples
 - Massive Black Holes
 - Extreme Mass Ratio Inspirals
- Chapter Coordinators, Section Writing Teams
- 100+ active contributors, ~225 pages content, ~1500 refs



Working Group Activities

- ***Foster collaboration and work on LISA related astrophysics***
- ***White Paper*** (final version expected ~summer 2021)
- ***Pre-LISA EM Observations Sub-group*** (first organizational meeting!)
- ***Collaborative Working Group wide Projects***
 - “Flagship” projects to build collaboration and address key LISA science
 - Projects that require wide expertise from many areas
 - Open to all Working Group Members



Questions/Comments/Interest

Astro Working Group Chairs
astro-wg-chairs@lisamission.org



Catherine Machin