Announcement:

- PTAR Process
  - http://pcos.gsfc.nasa.gov/technology/PCOS_PATR_2013.pdf
  - Input to NASA technology program
    - What are our technology capability gaps?
      - Seeking input from community
      - Just finished technical roadmap
        - http://pcos.gsfc.nasa.gov/technology/
        - Need to squeeze into PTAR form (Tuck, GM organize)
    - Additional input welcome

If you have any questions, please contact

me or Thai Pham: thai.pham@nasa.gov

L3 Scenario

Restrictions imposed by ESA

- International contribution
  - Limited to 20% of total budget (~$350M)
  - Must not be mission critical
    - Flight equivalent must exist in Europe
  - Must bring real cost savings
    - Needs clean interfaces
    - Minimize shadow engineering required in ESA and Member States
    - Low friction losses required

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The US and the Chinese Scientific community expressed strong interest to join.

China also has plans for a China-led mission to be launched 2030s

Roadmap for eLISA as ESA L3

- eLISA Science Theme selected as L3 in 2013
- Technology Roadmap work 2013 – 2015
- Possibly continued Mission Concept Study 2014 – 2015
- Successful LISA Pathfinder flight in 2015
  - Assessment of technology status
  - Possibly additional work, e.g. breadboarding of Payload + (1 to 4) years
- Selection of Mission Concept in 2015 + (1 to 4)
- Possibly Start EQM of complete Payload 2015 + (2 to 5)
- Start of Industrial Definition Study 2015 + (2 to 5)
- Start of Industrial Implementation 2015 + (6 to 9)
- Launch in 2015 + (15 to 18)

Minor Partnership in L3

- NASA has expressed an interest.
- Advantages
  - Definite plan
  - Builds on strong European commitment in the past
  - Builds on long history of collaboration on LISA and LPF
  - May be compatible with NASA's willingness to invest
- Disadvantages
  - Very long range plan
  - Uncertain mission concept (as seen from NASA HQ)
  - Subject to slipping of L1, L2, L3, M3 and M4
  - Erosion of technical readiness
  - Uncertain U.S. role, weak hand in 2020 decadal

NASA-led, SGO Mid

- NASA lead has been the NRC recommendation.
- Advantages
  - Strong(er) hand in 2020 decadal
  - NASA has a history of successfully carrying out large and complex missions.
  - NASA has strong systems engineering.
- Disadvantages
  - There is no plan.
  - Requires strong performance in highly competitive 2020 decadal
  - Astrophysics may have few new missions in 2020's, after HST de-orbit, WFIRST launch in 2025, slipping and unpredictable budgets
  - Technology development would be non-standard
  - Unclear role for ESA and other potential partners

2020 Decadal Process

- The 2020 process is undefined, but planning has started.
- What happened last time over a 2+ year period
  - Pre-decadal costing
  - Science white papers: 9 responses, 70 pages total
  - RFI 1: 20 page response to questionnaire, >300 received
  - RFI 2: 92 page response to questionnaire, 22 requested
  - Written questions: 18 page response
  - Public meetings: 2 public meetings, 5 town halls, 3 workshops
  - Community outreach blitz
  - Web sites at JPL, GSFC and Europe: 6 primary documents, 9 secondary documents, 693 pages total
  - Panel interview: 2 days, 122 slides
- Science white papers in 2018, recommendations in 2020

Where to go from here?