Cosmic Origins Program Analysis Group

Astrophysics Subcommittee Meeting

March 26-27, 2014

Kenneth Sembach

2014 COPAG Executive Committee

- Current Members

– Daniela Calzetti	University of Massachusetts – Amherst
– Julianne Dalcanton	University of Washington
– Dennis Ebbets	Ball Aerospace
– Michael Garcia (ex-officio)	NASA Headquarters
– James Green	University of Colorado – Boulder
– Sally Heap	Goddard Space Flight Center
– Lynne Hillenbrand	California Institute of Technology
– David Leisawitz	Goddard Space Flight Center
– James Lowenthal	Smith College
– Susan Neff (ex-officio)	GSFC COR Program Office
– Mario Perez (ex-officio, Ex. Secretary)	NASA Headquarters
– Paul Scowen	Arizona State University
– Ken Sembach (Chair)	Space Telescope Science Institute

Members in red are new to the Executive Committee since the November 2013 Astrophysics Subcommittee telecon

Recent Activities

- Recruitment of new Executive Committee members
- Establishment of 3 new Science Analysis Groups, as approved at the November 2013 ApS telecon
  - SAG #6: Cosmic Origins Science Enabled by the WFIRST-AFTA Coronagraph
    - COPAG Lead: James Green
  - SAG #7: Science Enabled by Operations Overlap of the Hubble Space Telescope and the James Webb Space Telescope
    - COPAG Lead: Dennis Ebbets
  - SAG #8: Science Enabled by the WFIRST-AFTA Data Archive
    - COPAG Lead: Sally Heap

(See backup slides for more details)

Recent Activities

- Establishment of 1 new Science Interest Group, as approved at the November 2013 ApS telecon
  - SIG #1: Far-Infrared Cosmic Origins Science and Technology Development
    - Lead: David Leisawitz

- January 2014 AAS in Washington, D.C.
  - Joint ExoPAG/COPAG session immediately prior to the AAS meeting
  - Program Analysis Group session

- Bi-weekly telecons

Upcoming COPAG Activities

- Activities for SAGs #6, #7, and #8 are nominally scheduled to be completed this summer, with reports available by the autumn 2014 Astrophysics Subcommittee meeting
- SIG#1 activities will begin in earnest with a community workshop in May 2014
- June 2014 AAS in Boston, MA
  - SAG #6, SAG #7, SAG#8, and SIG#1 will have splinter sessions for open dialog with the community
  - Joint COPAG/ExoPAG session (~1/2 day on Thursday, June 5)
    - Agenda under discussion (TBD with ExoPAG)
    - SAG reports, Beyond JWST and ATLAST study briefings
- Possible series of informational webinars under discussion

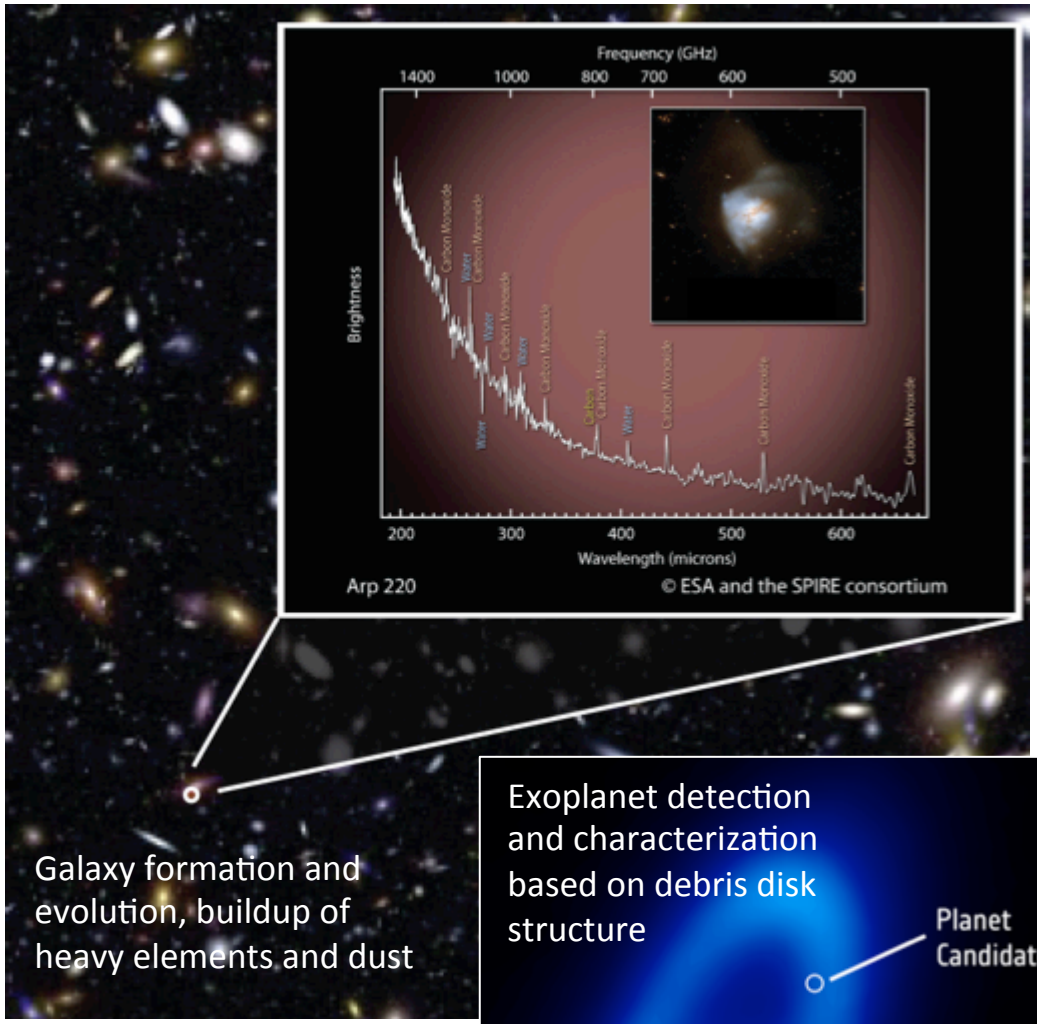
Bringing Fundamental Astrophysical Processes Into Focus: A Community Workshop to Plan the Future of Far-Infrared Space Astrophysics

Dates: May 12 – 13, 2014

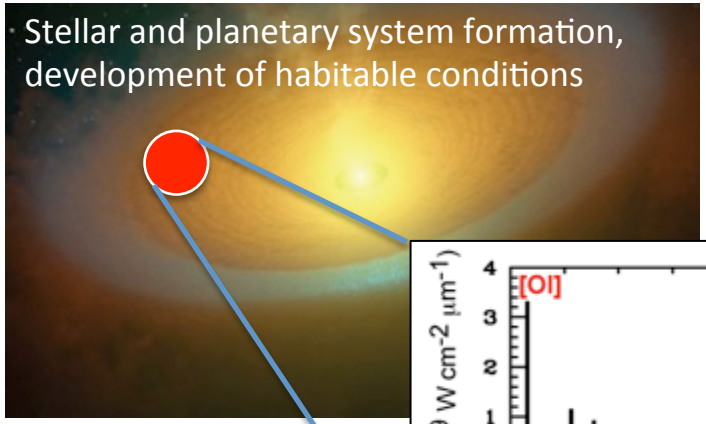
Location: Goddard Space Flight Center, Greenbelt, MD

For information, see:

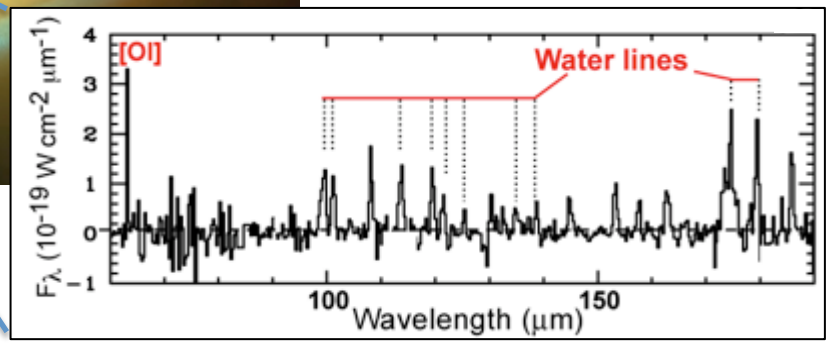
http://asd.gsfc.nasa.gov/conferences/FIR/

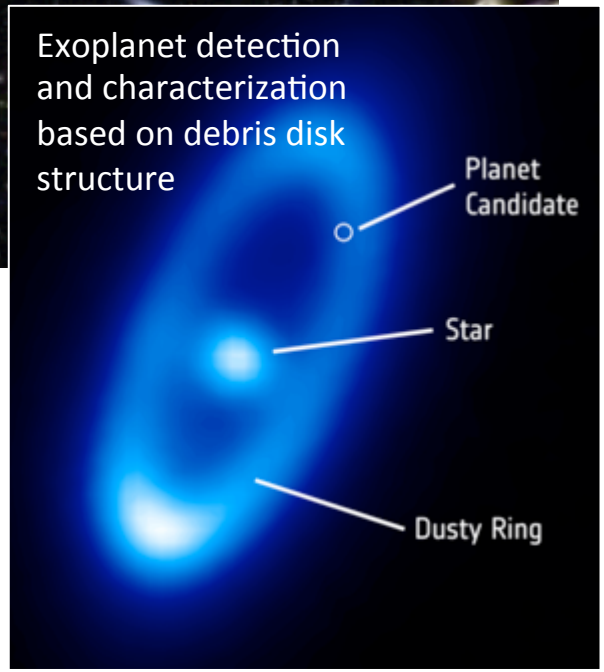


Galaxy formation and evolution, buildup of heavy elements and dust



Stellar and planetary system formation, development of habitable conditions





SAG #4 Report and Closure Request

- SAG #4: Technologies for a future far-IR mission
  - Work completed
  - Report submitted at November 2013 Astrophysics Subcommittee telecon for closure consideration
    - Cosmic Origins Program Analysis Group SAG #4: Technology Needs for Future Far-IR Telescopes and Instruments by P. Goldsmith & D. Leisawitz
    - http://cor.gsfc.nasa.gov/docs/COPAG_SAG4_report_final_Nov2013.pdf
  - Request that SAG #4 be formally closed upon acceptance of the report by the Astrophysics Subcommittee

SAG #5 Status

- SAG #5: Science objectives and technology requirements for a series of Cosmic Origins Probes
  - Support of NASA RFI workshop at STScI in September 2012
    - A one-day community workshop to discuss and prioritize a cohesive set of likely science goals that can motivate development of the next generation Ultraviolet/Visible space astrophysics mission(s)
  - Discussions with the community at the January 2013 AAS meeting
    - No substantive work since this time
  - Report now expected to be complete in the Summer 2014 timeframe

Backup Slides

- SAG/SIG descriptions presented at the January 2014 AAS meeting are contained on the following pages

- Formal descriptions of COPAG SAGS and SIGS can be found on the Cosmic Origins website at http://cor.gsfc.nasa.gov/copag
  - These descriptions were also circulated for review at the November 2014 ApS telecon

SAG #6: Cosmic Origins Science Enabled by the WFIRST-AFTA Coronagraph

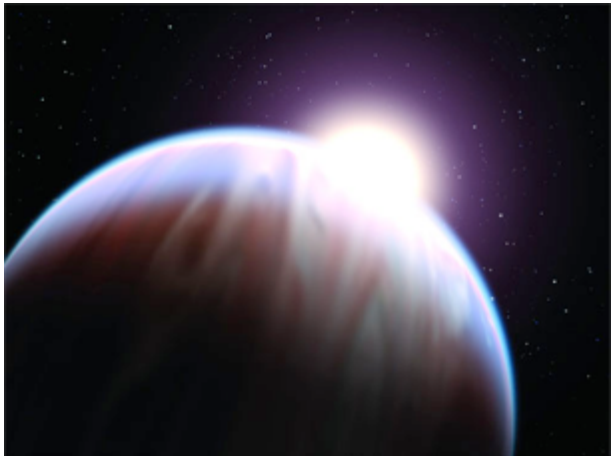
- WFIRST-AFTA is baselined to have a coronagraph
  - (WFIRST SDT meeting on Thursday - Chesapeake D&E)
- Cosmic Origins science cases that take advantage of the coronagraph are to be solicited
  - To be provided as input for possible coronagraph design considerations and use cases
  - To scope the degree of community interest in COR coronagraphic science with WFIRST-AFTA
  - To develop "contingency" coronagraph use examples in case the coronagraph capabilities are reduced during development
- COPAG Lead is Dennis Ebbets (debbets@ball.com)

SAG #7: Cosmic Origins Science Enabled by Operations Overlap of HST and JWST

- Engage the astronomical community in outlining the scientific case for having HST and JWST operations overlap

- Are there precursor observations that HST should do prior to JWST launch that might not otherwise be done through the regular time allocation process?

- Are there compelling science cases for simultaneous HST – JWST observations?



- Are there compelling science cases for HST follow-up of JWST observations or discoveries?

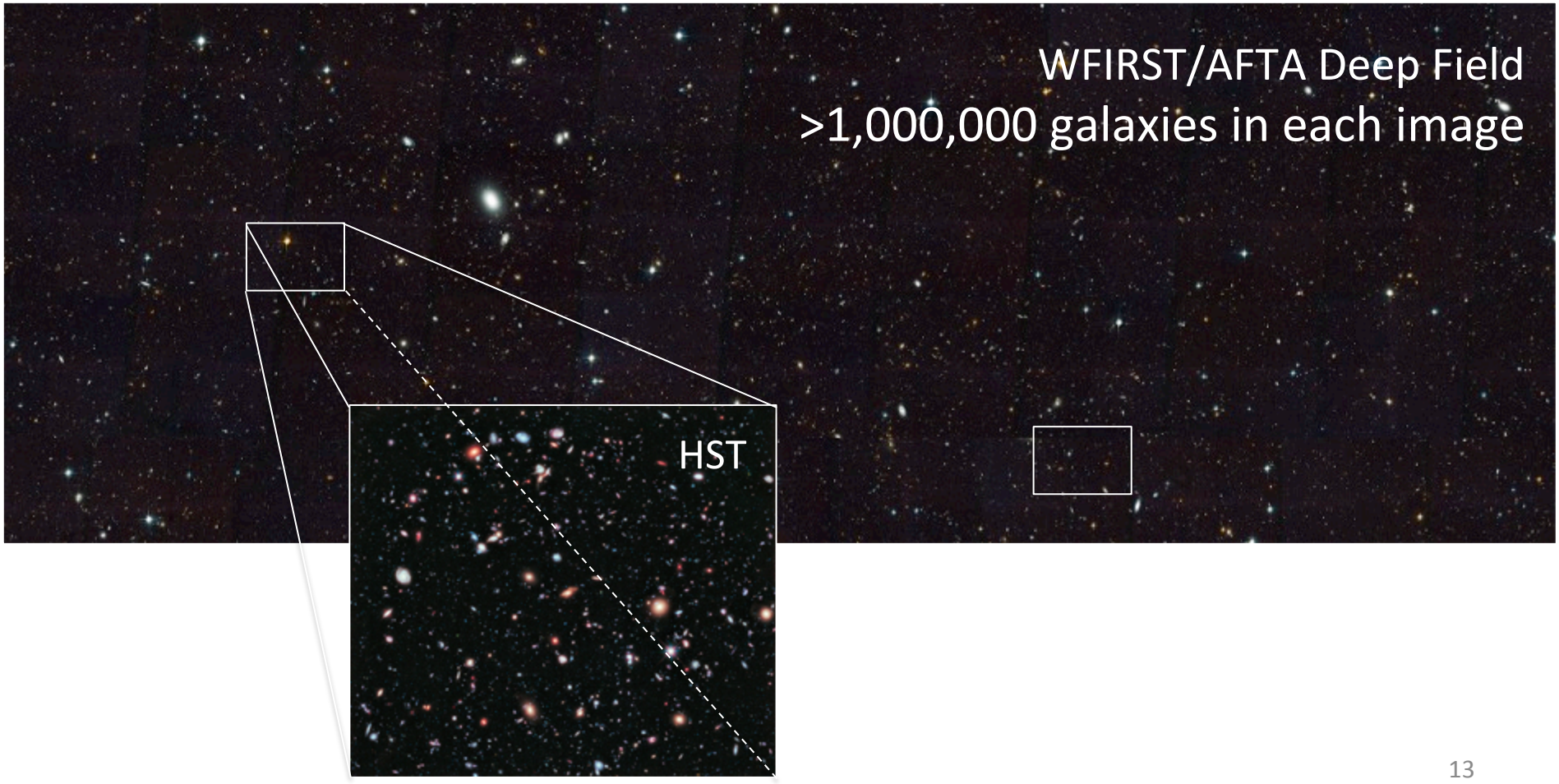
- Are there expected discoveries by other facilities in the 2020 timeframe (e.g., TESS or Euclid) that require follow-up by both HST and JWST?

SAG #7: Cosmic Origins Science Enabled by Operations Overlap of HST and JWST

- Synthesize input received from the community
- Identify compelling Cosmic Origins science requiring simultaneous or complementary HST and JWST observations
- Determine if there are science drivers that may inform the planning of early operations of JWST or extended operations of HST
- COPAG Lead is James Green (james.green@Colorado.edu)

SAG #8: Cosmic Origins Science Enabled by the WFIRST-AFTA Data Archive

- WFIRST-AFTA will produce a huge archive for COR research



SAG #8: Cosmic Origins Science Enabled by the WFIRST-AFTA Data Archive

- Analyze how the archive is to be used and scope the data requirements necessary to conduct COR science
- Solicit community input to identify the types of investigations and the kinds of data products that are valued and needed
- Consider what other assets or efforts may be needed to maximize the science return from the WFIRST archive
  - E.g., Coordination with LSST, Euclid, or JWST; GO funding for ground-based observations or theoretical studies
- COPAG Lead is Sally Heap (sally.heap@nasa.gov)

What's next for NASA Far-Infrared Astronomy?

Announcement of a new

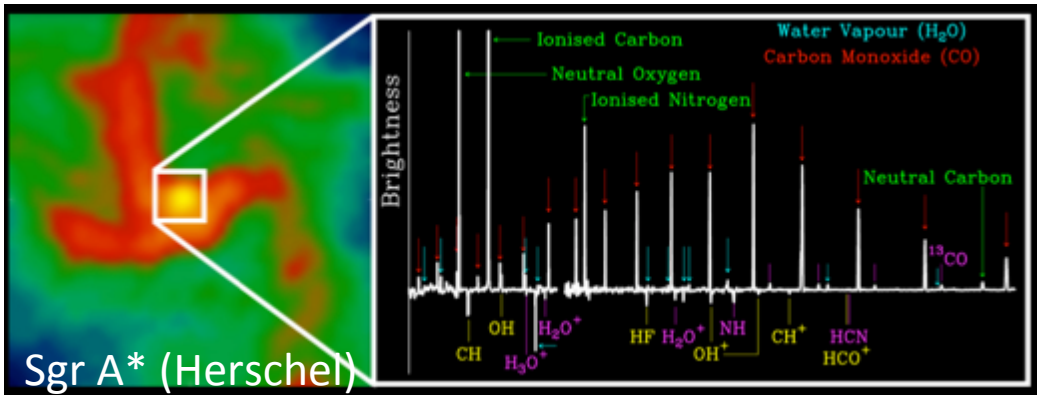
Far-Infrared Science Interest Group (SIG)

Provides input for the NASA Astrophysics Subcommittee via the
Cosmic Origins Program Analysis Group (COPAG) Executive Committee

To join or for information: David.T.Leisawitz@nasa.gov

Motivation and starting points:

- 2010 Decadal Survey
- Latest results – Herschel, SOFIA...
- New science priorities
- New key technologies
- NASA Astrophysics Roadmap
- NASA budget environment



Mission of FIR SIG:

Work with COPAG and US FIR community to:

- Develop plans for NASA support of FIR astronomy
- Provide input for technology development roadmaps
- Develop Design Reference Missions (DRMs)
- Explore SPICA and other options