Cosmic Origins Program Analysis Group

Astrophysics Subcommittee Meeting

August 11-12, 2014

Kenneth Sembach

2014 COPAG Executive Committee

- Current Members

– Ken Sembach (Chair)	Space Telescope Science Institute
– Daniela Calzetti	University of Massachusetts – Amherst
– Julianne Dalcanton	University of Washington
– Dennis Ebbets	Ball Aerospace
– 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
– Paul Scowen	Arizona State University

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– Deborah Padgett (ex-officio)	GSFC COR Program Office
– Susan Neff (ex-officio)	GSFC COR Program Office
– Mario Perez (ex-officio, Ex. Secretary)	NASA Headquarters
– Michael Garcia (ex-officio)	NASA Headquarters

Members in red will be rotating off the Executive Committee later this year. Members in green are new since the last meeting.

Recent Activities

- Recruitment of new Executive Committee members
  - Dear Colleague letter sent to the community on June 24, 2014
  - Deadline for nominations is August 18, 2014
  - Selection announcement expected in September 2014
  - Expect to replace two members
- Bi-weekly telecons with Executive Committee Members (80-90% participation)
- Solicitation of community input for identification of COR technology gaps
  - Used in COR Program Office planning of technology prioritization

Recent Activities – AAS

- SAG #6, 7, 8 and SIG #1 sessions at June 2014 AAS
- Joint ExoPAG/COPAG session (1/2 day)
  - SAG session summaries (Dennis Ebbets, Jim Green, Sally Heap)
  - SIG1, Far-IR Future + Far-IR workshop report (David Leisawitz)
  - AURA "Beyond JWST" study status (Sara Seager)
  - Spitzer status and Senior Review recommendation (Mike Werner)
  - COR program technology prioritization (Susan Neff)
  - Exoplanet probe study results (Sara Seager, Karl Stapelfeldt)
  - Future mission technology needs (Harley Thronson)
  - Discussion

- Planning for January 2015 AAS in Seattle is underway
  - Joint PAG session planned for Sunday, January 4

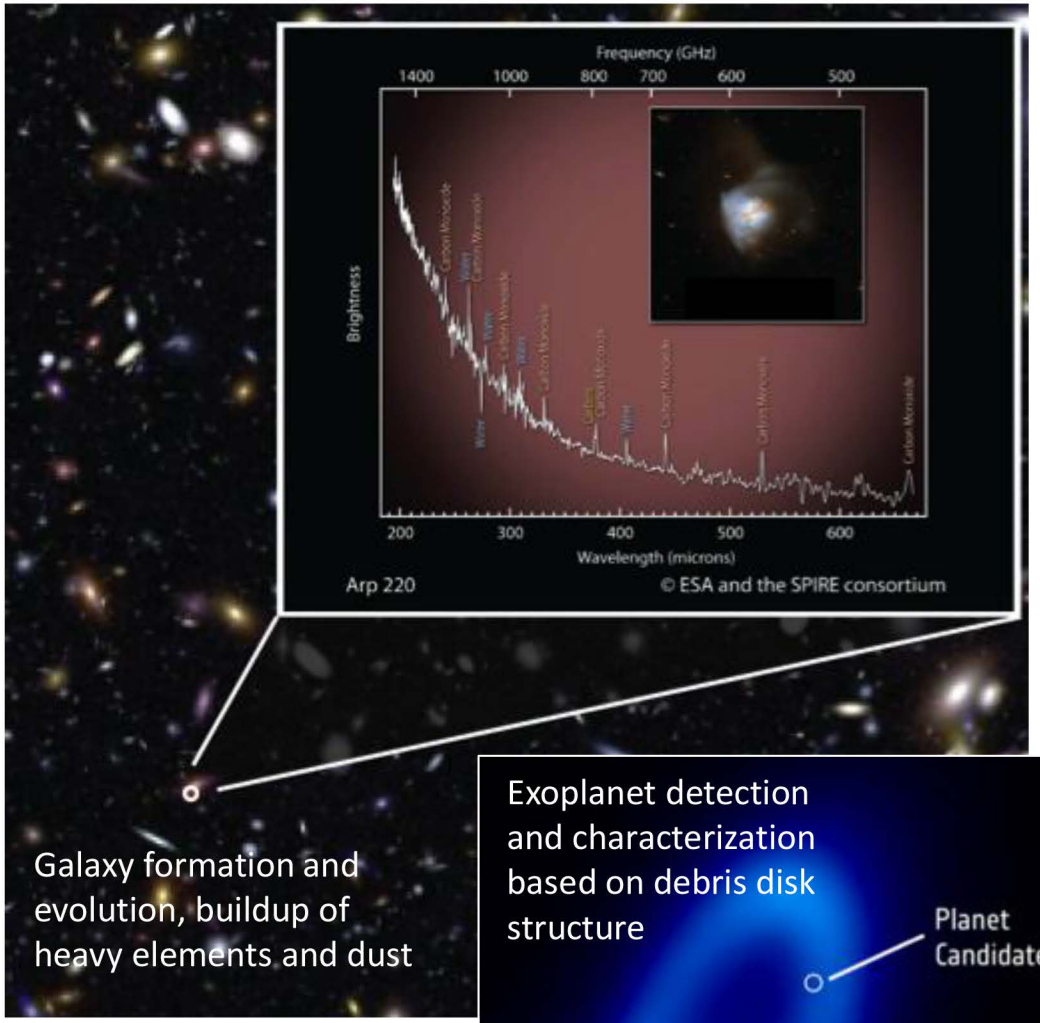
Bringing Fundamental Astrophysical Processes Into Focus: A Community Workshop to Plan the Future of Far-Infrared Space Astrophysics

Dates: May 12 – 13, 2014

Location: Goddard Space Flight Center, Greenbelt, MD

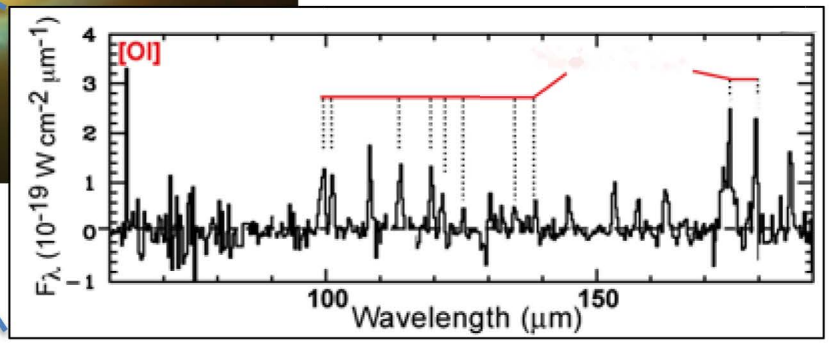
For information, see:

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

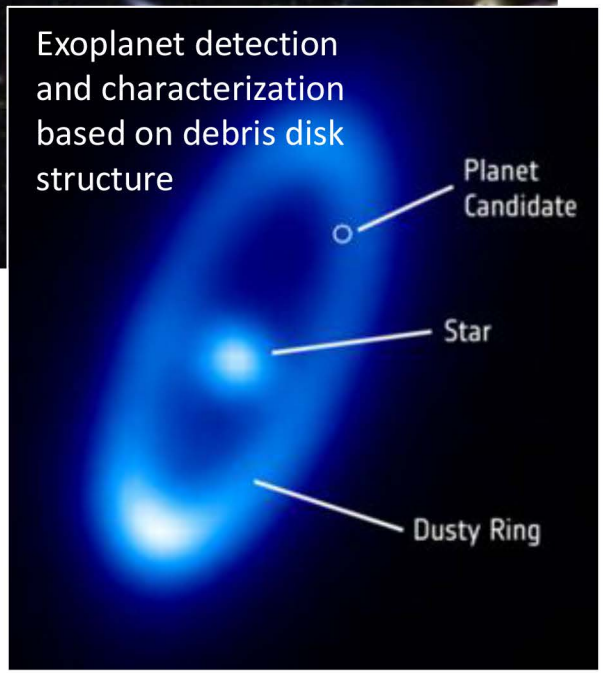


Galaxy formation and evolution, buildup of heavy elements and dust

Stellar and planetary system formation, development of habitable conditions



Exoplanet detection and characterization based on debris disk structure



SAG Activities

- SAGs #6, #7, and #8 are nominally scheduled to be completed later this summer, with reports available by next (autumn) Astrophysics Subcommittee meeting
  - SAG #6: Cosmic Origins Science Enabled by the WFIRST-AFTA Coronagraph
    - COPAG Lead: Dennis Ebbets
  - SAG #7: Science Enabled by Operations Overlap of the Hubble Space Telescope and the James Webb Space Telescope
    - COPAG Lead: James Green
  - SAG #8: Science Enabled by the WFIRST-AFTA Data Archive
    - COPAG Lead: Sally Heap
- SAGs are active and engaged with the community

(See backup slides for background)

SAG Activities (con't)

- 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
  - Closeout report deferred due to other work

SAG Activities - Request

- Request to launch SAG #9: Science Enabled by Dedicated Spitzer Observing Campaigns Prior to JWST Launch
  - This Science Analysis Group [SAG #9] will engage the astronomical community in identifying compelling science with JWST enabled by, or benefitting from, large blocks of Spitzer observing time prior to JWST launch in late 2018. The SAG will also analyze the results of SAG #7 (Science enabled by operations overlap of HST/JWST) to determine whether the science cases identified by that SAG would benefit from new Spitzer observations. The SAG will document its findings in a report to the Astrophysics Subcommittee within 6-9 months of the start of SAG activities.
- Requested by the Spitzer Project
  - Desire to have wide community input through COPAG
- Will coordinate with Spitzer's Users Group and JWST Science Working Group

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 2013 ApS telecon

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

- WFIRST-AFTA is baselined to have a coronagraph
- 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?

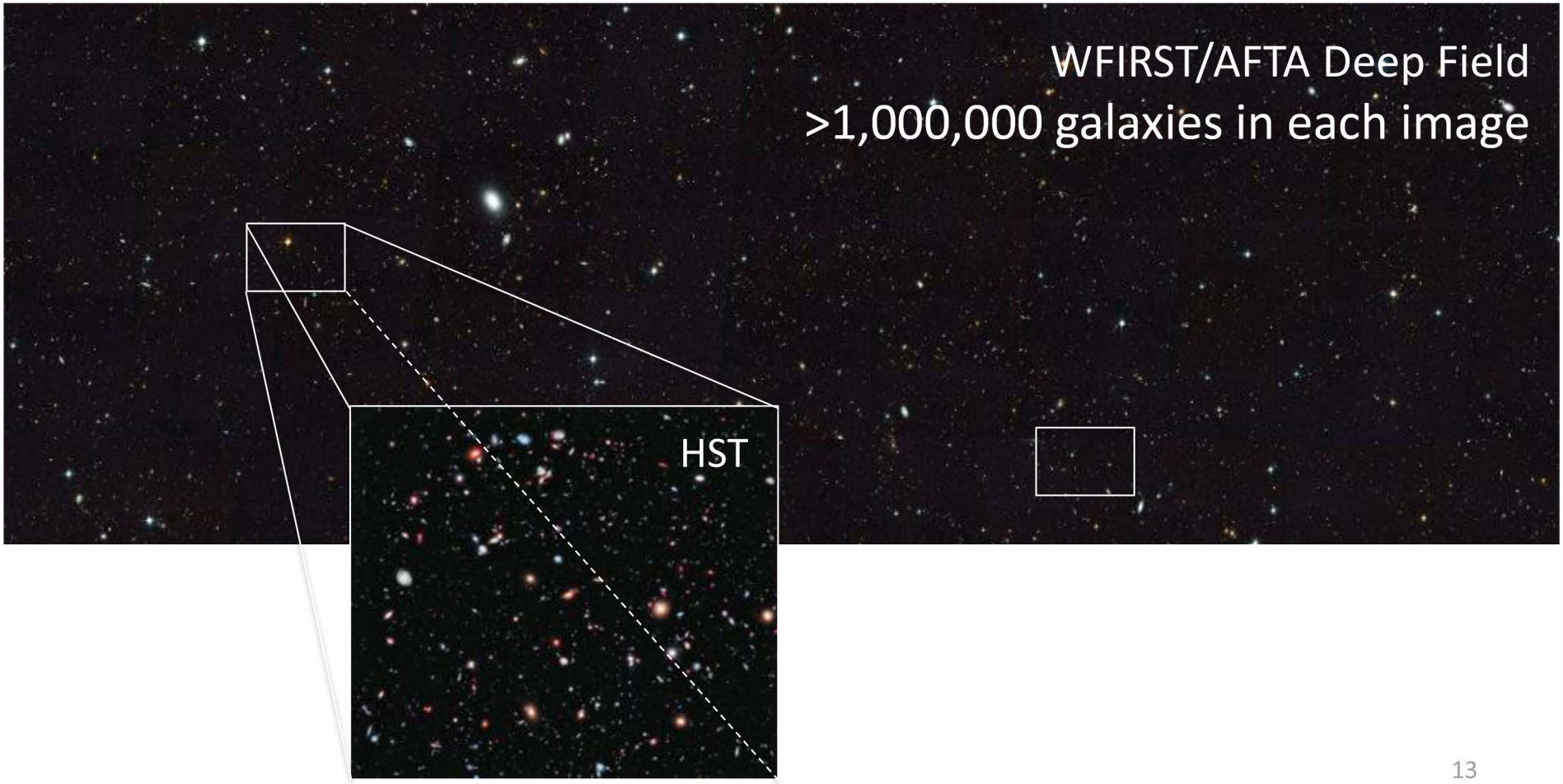
- Are there expected discoveries by other facilities in the 2020 timeframe (e.g., TESS or Euclid) that require follow-up by both HST and JWST?

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

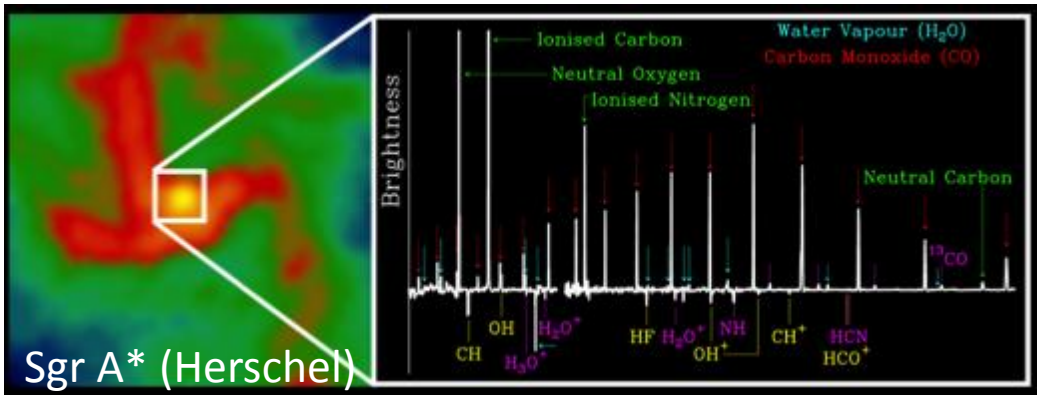
Far-Infrared Science Interest Group (SIG)

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