All oral sessions will be held in Phillips Auditorium unless noted.
On Monday, all meals and breaks are in Pratt.
On Tuesday–Friday, breakfast & the morning break are in Phillips; lunch & the afternoon break are in Pratt.

Monday, August 16

8:30 a.m.  Continental breakfast

9 a.m.–5 p.m.  All Day Hands-On Tutorial (Pratt)

11 a.m.  Morning break

1–2 p.m.  Lunch

2–4:30 p.m.  GPU Working Group (Phillips Auditorium)
  David Kirk, Nvidia; Mike Clark, Harvard-Smithsonian CfA; and
  Richard Edgar, Harvard SEAS

3:30 p.m.  Afternoon break
Tuesday, August 17

8:30 a.m. Continental breakfast

Welcome and Framework  
*Session chair, Jonathan Weintroub*

9 a.m. Jonathan Weintroub, Harvard-Smithsonian CfA  
*Logistics*

9:05 a.m. Robert Wilson, Harvard-Smithsonian CfA  
*Welcome*

9:15 a.m. Dan Werthimer, UC Berkeley  
*Tribute to Don Backer*

9:25 a.m. Dan Werthimer (invited), UC Berkeley  
*CASPER Religion and Future Directions*

9:45 a.m. Kees Vissers (invited), Xilinx  
*Compiling Signal Processing on FPGAs*

10:15 a.m. David Kirk (invited), Nvidia  
*GPUs Revolutionized Graphics and Impacted Parallel Computing; Now, Let’s Go After Science!*

10:45 a.m. Morning break

Instruments I: Facilities  
*Session chair, Jason Manley*

11 a.m. Kirit Karkare, Caltech  
*KuPol: A New Ku-Band Polarimeter for the OVRO 40-m Telescope*

11:20 a.m. Yashwant Gupta, National Centre for Radio Astrophysics, India  
*Next Generation Digital Backends at the GMRT: From FPGAs to Hybrid Systems*

11:40 a.m. Luis Quintero, NAIC Arecibo Observatory  
*Present and Future of the Arecibo Observatory Instrumentation*

12 noon Marc Torres, IRAM  
*Recent Correlator Developments for the IRAM Interferometer*

12:20 p.m. Robert Navarro, Jet Propulsion Laboratory  
*Digital Backend for JPL Deep Space Communications Complex VLBI Processor*

12:40 p.m. François Kapp, SKA SA/MeerKAT  
*Herding KATs*

1 p.m. **Group Photograph** (steps outside Phillips Auditorium)

1:15–2:15 p.m. Lunch

2:15–2:45 p.m. Working Group Scheduling
2:45–5 p.m.  **GPU Training**, Richard Edgar (Phillips Auditorium)  
**Hands-On Tutorial** (Pratt)  
**Working Groups** (Pratt Lobby, Fishbowl, Perkin Lobby)  
Proposed Workshops and Facilitators  
**WG1: Correlators, Beamformers, and Related Topics.** Aaron Parsons, Jason Manley, Yashwant Gupta  
**WG2: Pulsars, Transients, and Related Topics.** John Ford, Glenn Jones  
**WG3: Software Tools and Techniques.** Aaron Parsons, Nimish Sane, Mike Clark  
**WG4: Next-Generation Hardware.** François Kapp, Dan Werthimer, Simon Scott  
**WG5: Wideband Techniques: Samplers, FPGA Interfacing.** Marc Torres, John Ford, Bob Wilson  

3:30 p.m.  Afternoon break  

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**Wednesday, August 18**  

8:30 a.m.  Continental breakfast  

**Instruments I: Facilities** (continued)  
*Session chair, Jason Manley*  
9 a.m.  Dale Gary, New Jersey Institute of Technology  
*Owens Valley Solar Array Expansion: A ROACH-Based Correlator with Spectral Kurtosis RFI Flagging*  
9:20 a.m.  John Ford, NRAO  
*CASPER Instruments at Green Bank*  
9:40 a.m.  Joe Craig, Long Wavelength Array  
*The Long Wavelength Array*  

**Instruments II: Pulsars, Transients, and VLBI**  
*Session chair, John Ford*  
10 a.m.  Russ McWhirter, MIT Haystack Observatory  
*Haystack/NRAO VLBI Digital Backend on the ROACH Platform*  
10:20 a.m.  Keith Morris, NRAO  
*RDBE Implementation for VLBA*  
10:40 a.m.  Shilpa Bollineni, National Radio Astronomy Observatory  
*ROACH Ultimate Pulsar Processing Instrument on the 43-m Telescope*  

11 a.m.  Morning break
Instruments II: Pulsars, Transients, and VLBI (continued)

Session chair, John Ford

11:20 a.m.  Glen Langston, NRAO
           WUPPI! Wideband Galactic Mapping and Pulsar Search Application

11:40 a.m.  Glenn Jones, NRAO/Caltech
           Transient Instrumentation with CASPER Tools

12 noon    Laura Spitler, Cornell University
           Transient Searching with Small Telescopes

12:20 p.m.  Anish Roshi, NRAO, Green Bank
           A Wideband Pulsar Machine Using CASPER Technology

12:40 p.m.  Cristina Garcia Miro, Madrid Deep Space Communication Complex
           Multi-Frequency Synthesis Technique in the Deep Space Network

1 p.m.      Henry Chen, UCLA
           DSP Architectures for Low-Power Communications and Neural Spike Sorting

1:20–2:30 p.m.  Lunch

2:30–3:30 p.m.  Working Group Feedback and Adjustments

3:30 p.m.     Afternoon break

3:45–5 p.m.   GPU Training, Richard Edgar (Phillips Auditorium)
               Hands-On Tutorial (Pratt)
               Working Groups (Pratt Lobby, Fishbowl, Perkin Lobby)

6 p.m.       Advisory Board Meeting, Jonathan Weintroub, chair (Fishbowl)

Thursday, August 19

8:30 a.m.    Continental breakfast

CASPER Science

Session chair, Jim Moran

9 a.m.       Aaron Parsons (invited), UC Berkeley
             PAPER: A Status Report on 16- and 32-Antenna Deployments

9:30 a.m.    Paul Demorest (invited), NRAO
             Pulsar Science with GUPPI

10 a.m.      Shep Doeleman (invited), MIT Haystack Observatory
             The Event Horizon Telescope

10:30 a.m.   Santa Martinez Sanmartin, INSA
             Studies of Martian Dust Storms with Deep Space Network Antennas

10:50 a.m.   Andrew Siemion, UC Berkeley
             CASPER and the Search for Extraterrestrial Intelligence
11:10 a.m. Morning break

**GPUs**
*Session chair, Lincoln Greenhill*

11:30 a.m. Terry Filiba, UC Berkeley  
*Heterogeneous Radio SETI Spectrometer*

11:50 a.m. Richard Edgar, Harvard SEAS  
*MWA Real-Time System*

12:10 p.m. Michael Clark, Harvard  
*Using GPUs for Signal Correlation*

12:30 p.m. Melvyn Wright, UC Berkeley  
*Real-Time Imaging*

12:50 p.m. Kristian Zarb Adami, Oxford University  
*Real-Time Dispersion Searches Using GPUs*

1:10–2:10 p.m. Lunch

**Hardware Developments**
*Session chair, François Kapp*

2:10 p.m. Jason Manley, SKA South Africa  
*Packetized Digital Backends*

2:30 p.m. David George, SKA South Africa  
*ROACH II*

2:50 p.m. Homin Jiang, Academia Sinica, Institute of Astronomy and Astrophysics  
*5 Gsps ADC Status Update and Next Steps*

3:10 p.m. Simon Scott, University of Cape Town  
*RHINO, A Low-Cost Reconfigurable Platform for Software Defined Radio*

3:30 p.m. Afternoon break

3:45–5 p.m. **GPU Training**, Richard Edgar (Phillips Auditorium)  
**Hands-On Tutorial** (Pratt)  
**Working Groups** (Pratt Lobby, Fishbowl, Perkin Lobby)

5:15–7:15 p.m. **Dinner and Remembrances of Don Backer** (Perkin Lobby)

7:30 p.m. **Public Lecture**, Dan Wertheimer, UC Berkeley  
*Is Anybody Out There? The Search for ET with Help from Eight Million Volunteers*
Friday, August 20

8:30 a.m. Continental breakfast

**Instruments III**  
*Session chair, Mel Wright*

9 a.m. Walid Majid, JPL/Caltech  
*Simultaneous Telemetry and Science in the DSN*

9:20 a.m. Danny Price, University of Oxford  
*Medicina, Parkes, and Rooftops*

9:40 a.m. Matthew Stevenson, Caltech  
*RFI Excision with an iBOB*

**Software Tools**  
*Session chair, Aaron Parsons*

10 a.m. Shanly Rajan, SKA-SA  
*Automated Gateware Discovery Using Open Firmware*

10:20 a.m. Nimish Sane, University of Maryland, College Park  
*Toward Open Source Tool Flow for Designing Astronomical Signal Processing Systems*

10:40 a.m. Brandon Hamilton, University of Cape Town  
*BORPH: An Operating System for the NetFPGA Platform*

11 a.m. David MacMahon, UC Berkeley  
*Collaborative CASPER Development with System Generator and Git*

11:20 a.m. Morning break

**Optical Applications**  
*Session chair, Dan Werthimer*

11:40 a.m. Rurik Primiani, Harvard-Smithsonian CfA  
*Occultation Detection of Kuiper and Oort Cloud Objects with Whipple*

12 noon Curtis Mead, Harvard SEAS  
*An Optical SETI Research Platform Using FPGAs*

**Nonastronomical Applications**  
*Session chair, Yashwant Gupta*

12:20 p.m. Ran Duan, Caltech  
*Software-Defined Radio Readout for MKIDs*

12:40 p.m. Peter McMahon (invited), Stanford University  
*Applications of CASPER Technology in Bioinformatics*

1:10–2:15 p.m. Lunch

2:15–3:15 p.m. **Wrap-Up and Overflow Activities** (Phillips Auditorium)