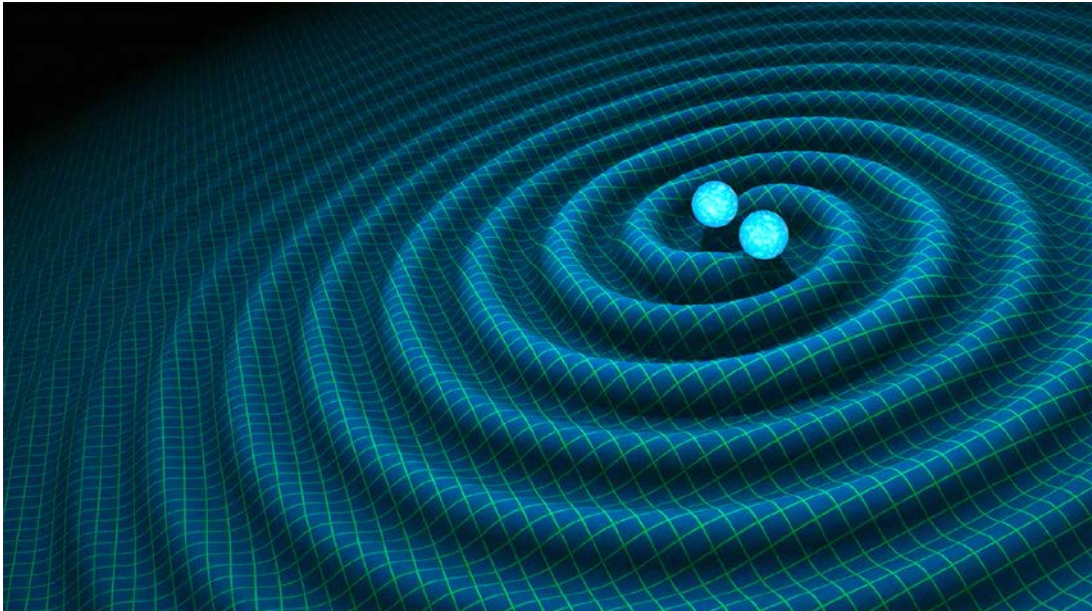




The Tenth Harvard-Smithsonian  
Conference  
on Theoretical Astrophysics



## Scientific Program



Credit: R. Hurt/Caltech-JPL

# Gravitational Wave Astrophysics

Sponsored by Raymond and Beverly Sackler and Irwin Shapiro

Monday, May 7th through Wednesday, May 9th, 2018

Sheraton Commander Hotel, 16 Garden Street, Cambridge, MA

*Hosted by the Institute for Theory and Computation, Harvard University*

*<http://www.cfa.harvard.edu/events/2018/sackler/>*

**All talks are 30 minutes (25+5)**

**Sessions held in the George Washington Ballroom; Coffee Breaks held in the adjacent Terrace Room**

## Monday, 9:00AM-5:00PM

9:00-9:05AM

**Charles Alcock and Avi Loeb:** Welcome

### Session 1: Detectors and Techniques

*Session Chair: Vicky Kalogera*

9:05-10:30AM

**Lisa Barsotti:** Status of LIGO and Virgo towards O3

**Matt Evans:** Future ground-based detectors

**Karsten Danzmann:** LISA

10:30-11:00AM      *Coffee Break*

11:00-11:30AM

**Maura McLaughlin:** Pulsar Timing Arrays: Current Status and Future Prospects

### Session 2: Data analysis + parameter estimation + Model Selection

*Session Chair: Jim Moran*

11:30AM-12:30PM

**Alessandra Buonanno:** The Next Theoretical Challenges for Gravitational-Wave Observations

**Duncan Brown:** Template-based search techniques

12:30-2:00PM      *Lunch Break*

2:00-3:00PM

**MariaAlessandra Papa:** Continuous source search techniques

**Neil Cornish:** Gravitational wave parameter estimation

3:00-3:30PM      *Coffee Break*

3:30-4:00PM

**Will Farr:** Model Selection

### Session 3: Source populations

*Session Chair: Ramesh Narayan*

4:00-5:00PM

**Ilya Mandel:** Formation of merging black holes through isolated binary evolution via the common envelope phase

**Selma de Mink:** Black hole binary formation – field (non-common envelope)

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**Tuesday, 9:00AM-5:30PM**

**Session 3: Source populations, cont'd**

*Session Chair: Ramesh Narayan*

9:00-10:30AM

**Fred Rasio:** Black Hole Binary Formation through Stellar Dynamics in Globular Clusters

**Smadar Naoz:** Black Hole Binary Formation through Stellar Dynamics in Galactic Nuclei

**Deirdre Shoemaker:** Black hole binary - simulations

10:30-11:00AM      *Coffee Break*

*Session Chair: Josh Grindlay*

11:00AM-12:30PM

**Daniel Holz:** Some recent results in GW astrophysics

**Stephan Rosswog:** Neutron star mergers as cosmic factories of heavy elements

**Monica Colpi:** LISA black hole coalescences: on clock?

12:30-2:00PM      *Lunch Break*

2:00-3:30PM

**Stan Woosley:** The stellar mass black hole birth function

**Adam Burrows:** Gravitational wave astronomy from space: LISA and its pathfinder

**Marta Volonteri:** Gravitational waves as probes of massive black hole evolution

**Session 4: Results from LIGO O1/O2**

3:30-4:00PM      *Coffee Break*

*Session Chair: Irwin Shapiro*

4:00-5:30PM

**Ben Farr:** BBH detections in O1/O2

**Bangalore Sathyaprakash:** A "no-hair" test for binary black holes

**Paolo Pani:** Testing the nature of compact objects with gravitational waves

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## Wednesday, 9:00AM-12:30PM

### Session 5: Electromagnetic counterparts + follow-up

*Session Chair: Edo Berger*

9:00-11:00AM

**Wen-fai Fong:** Short-duration gamma-ray bursts in the era of GW discovery

**Brian Metzger:** Kilonova emission from a binary neutron star merger

**Raffaella Margutti:** Radio and X-ray counterparts to BNS mergers

**Bence Kocsis:** EM counterparts for LISA sources

11:00-11:30AM      *Coffee Break*

11:30AM-12:30PM

#### **Panel on EM follow-up**

Marcelle Soares-Santos, Mansi Kasliwal, Stephen Smartt, Philip Cowperthwaite,  
Lindy Blackburn

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12:30PM                      **End of Conference**

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## Wednesday, 6:30-10:00PM

(6:30PM) in the Mount Vernon Room

**Reception**

(7:00PM)

**Banquet Dinner** in the George Washington Ballroom

(8:30PM)

**After-Dinner Talk** by Rai Weiss with introductory remarks by Avi Loeb

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