

Sunday PM (June 21) - **Low Rotunda**

5:00-9:00 Registration and Welcoming Reception

7:30 “Edoardo Amaldi: the man of the renaissance” – lecture by Eugenio Coccia

Monday AM (June 22) – **Lerner Hall, Auditorium**

8:00-8:30 Coffee and Registration

Session Chair: Kazuaki Kuroda

8:30-9:00 Welcome Address (Jim Hough and Szabi Marka)

9:00-9:45 **Invited: Ground-based Interferometers and their Science Reach (Seiji Kawamura)**

9:45-10:30 **Invited: Advanced Interferometers and their Science Reach (David Shoemaker)**

10:30-11:00 Coffee Break

Session Chair: Dave Reitze

11:00-11:45 **Invited: Advances in Numerical Relativity (Manuela Campanelli)**

11:45-12:30 **Invited: Pulsar Timing Array for Gravitational Wave Detection (George Hobbs)**

Monday PM – **Lerner Hall, Auditorium**

Session Chair: Benoit Mours

2:00-2:45 **Invited: Multimessenger and Multiwavelength Gravitational Wave Astronomy (Bernard Schutz)**

2:45-6:00 Multimessenger Astronomy (Sources & Science)

2:45 Gravitational Waves from SGR Bursts – Peter Kalmus

3:04 Search for GW bursts associated with gamma-ray bursts using data from LIGO Science Run 5 and Virgo Science Run 1 – Patrick Sutton

3:23 The search for GW inspirals in association with short GRBs in LIGO S5 and Virgo VSR1 data – Nick Fotopoulos

3:42-4:06 Coffee Break

Session Chair: Scott Hughes

4:06 Cosmology from gamma-ray burst standard sirens – Daniel Holz

4:25 Very Low Latency Search for Low Mass CBC in the Upcoming LIGO S6 and Virgo VSR2 Data – Frederique Marion

4:44 Online all-sky burst searches during the joint S6/VSR2 LIGO-Virgo science run – Igor Yakushin

5:03 LOOC UP: guiding astronomical observations with interferometer data – Matthew Satterthwaite

5:22 Toward joint searches for GW and High-energy neutrinos – Eric Chassande-Mottin

5:41 A radio telescope and GW search for astrophysical transients – Valeriu Predoi

Monday evening – **Pupin 428**

Session Chair: Jay Marx

7:30-9:00 **Invited: GWIC Roadmap (followed by discussion) (Sheila Rowan)**

Tuesday AM (June 23) – **Lerner Hall, Auditorium**

Session Chair: Laura Cadonati

8:00-8:30 **Wake-up Lecture: MAGPIS Galactic Plane Survey (David Helfand, Columbia University)**

8:30-9:15 **Invited: GW Astronomy - Observational Results and their Impact (Peter Shawhan)**

9:15-12:20 **Data analysis, GW Astronomy (Results/Expected results)**

9:15 New Upper Limit on the Isotropic Stochastic Gravitational-Wave Background Using LIGO S5 Data – Vuk Mandic

9:35 All-sky search for gravitational-wave bursts in LIGO, GEO600, and Virgo S5/VSR1 data – Lindy Blackburn

9:55 Results of the IGEC2 search for gravitational wave bursts in 2005-2007 – Giovanni Prodi

10:15-10:40 Coffee Break

Session Chair: Francesco Fidecaro

10:40 The Search for Low Mass Compact Binary Coalescences in LIGO's S5 and Virgo's VSR1 Data – Ruslan Vaulin

11:00 All-Sky Burst Searches for Gravitational Waves at High Frequencies – Francesco Salemi

11:20 Searches for gravitational waves from known pulsars using LIGO S5 data – Matt Pitkin

11:40 The search for Vela pulsar in Virgo VSR1 data – Sergio Frasca

12:00 A search for gravitational waves from Cas A using LIGO S5 data – Karl Wette

Tuesday PM – **Lerner Hall, Auditorium**

Session Chair: Andreas Freise

2:00-4:00 **Status of current Ground-based Detectors**

2:00 The Status of GEO600- Hartmut Grote

2:25 LIGO Interferometers' Status – Rana Adhikari

2:50 The Australian International Gravitational Observatory –David Blair

3:10 Present Status of LCGT - Kazuaki Kuroda

3:35 Commissioning status of the Virgo interferometer - Bas Swinkels

4:00-6:00 Coffee concurrent with **Poster Session –Lerner Hall, Auditorium**

Tuesday evening

8:00-9:00 **Public Lecture – Lerner Hall, Auditorium**

Songs from Space: Black Holes and the Big Bang in Audio - Janna Levin

Wednesday AM (June 24) – Lerner Hall, Auditorium

Session Chair: Michele Vallisneri

8:00-8:30 **Wake-up Lecture: The Nuclear Spectroscopy Telescope Array (NuSTAR) (Chuck Hailey, Columbia University)**

8:30-9:15 **Invited: Space Antennas and their Science Reach (Karsten Danzmann)**

9:15-12:30 **LISA and DECIGO (Science and Instrument)**

9:15 LISA Pathfinder – Paul McNamara

9:40 DECIGO and Pathfinder Missions – Masaki Ando

10:05 Overview of LISA science – Joan Centrella

10:30-10:50 Coffee Break

Session Chair: Curt Cutler

10:50 The Mock LISA Data Challenges: status, achievements, and prospects – Michele Vallisneri

11:10 Long-arm interferometry in LISA – Ira Thorpe

11:30 LPF-Short arm interferometry – Antonio Garcia Marin

11:50 Gravity Reference Sensor for LISA and LISA Pathfinder – Giacomo Ciani

12:10 LISA Pathfinder Data Analysis – Mauro Hueller

Wednesday PM

Parallel Sessions (Coffee will be served 3:30-4:00)

1. Outreach/Education 2:00-3:15, Pupin 301 (Chair: Isabel Leonor)

1:45 Gravity Discovery Centre – Ju Li

2:00 A Model for E/PO Success: The Space Public Outreach Team – Joey Key

2:15 Education and Public Outreach at the LIGO Science Education Center, Livingston, Louisiana - Amber Stuver

2:30 “Black Hole Hunter”: The game that lets YOU search for gravitational waves - Ian Harry

2:45 Gravity: Beyond the Apple – Helen Lloyd, presented by Bangalore Sathyaprakash

3:00 Astronomy's New Messenger: A LIGO traveling exhibit to reach out to a young adult audience - Marco Cavaglia

2. LISA and Other Space-Based Detectors, 3:15-3:45, followed by 4:00-5:45, Pupin 301 (Chair: Martin Hewitson)

3:15 LISA long arm interferometry - Gerhard Heinzl, presented by Benjamin Sheard

3:30 Demonstration of Time Delay Interferometry for LISA - Daniel Shaddock

3:45-4:00 Coffee Break

4:00 Range measurement for LISA - Robert Spero

4:15 Time Delay Interferometry at the UFLIS - Shawn Mityrk

4:30 Mock Data Challenges for the LISA Pathfinder Mission - Martin Hewitson

4:45 Torsion pendulum testing of the LISA Pathfinder gravitational reference sensor – Peter Wass

5:00 BBO/Decigo and the NS-binary subtraction problem - Curt Cutler

5:15 In-orbit operation of a compact gravitational wave detector on a small satellite - Wataru Kokuyama

5:30 Test mass module for DECIGO pathfinder - Shuichi Sato

3. **GW Sources I, 2:00-3:45, Pupin 329 (Chair: Kristen Menou)**
 - 2:00 Gravitational Waves from Convection, the Standing-Accretion-Shock Instability and the Onset of Explosion in Core-Collapse Supernovae – Christian Ott
 - 2:15 Gravitational wave bursts from vortex avalanches in pulsar glitches – Lila Warszawski
 - 2:30 Gravitational waves from scattering of stellar-mass black holes in galactic nuclei – Ryan O’Leary
 - 2:45 Compact binaries as sources for ground-based gravitational-wave detectors – Ilya Mandel
 - 3:00 Astrophysics with gravitational-wave measurements of binary compact object mass distributions – Richard O’Shaughnessy
 - 3:15 Tidal effects on binary neutron star inspiral - Jocelyn Read
 - 3:30 A Periodic Table for Black Hole Orbits – Janna Levin

4. **GW Sources II, 4:00-5:45, Pupin 329 (Chair; Zoltan Haiman)**
 - 4:00 The Christodoulou memory and its detectability – Marc Favata
 - 4:15 Predicting the final spin from the coalescence of two black holes – Enrico Barausse
 - 4:30 Gravitational self-force effect on the innermost stable circular orbit of a Schwarzschild black hole – Norichika Sago
 - 4:45 Third post-Newtonian secular evolution of orbital elements for inspiralling compact binaries in quasi-elliptical orbits - K. G. Arun
 - 5:00 Testing Effective Quantum Gravity with Gravitational Waves – Nicolas Yunes
 - 5:15 Effects of spin precession on bounding the mass of graviton - Adamantios Stavridis
 - 5:30 Floquet analysis of Kerr orbits -- potential applications to calculating EMRI waveforms – Gabe Perez-Giz

5. **Innovative Approaches to Gravitational Wave Detection 2:00-3:30 PM, Pupin 428 (Chair: Nergis Mavalvala)**
 - 2:00 Nanogap Transducer for Broadband Gravitational Wave Detection – Guilherme Pimentel
 - 2:15 Demonstration of coating-free surface with a reflectivity of 99.9% – Frank Brückner
 - 2:30 Development of a low-frequency gravitational-wave detector using magnetically-levitated torsion antenna – Koji Ishidoshiro, presented by Masaki Ando
 - 2:45 Thermo-optic Response of Advanced Mirror Coatings – Gregory Ogin
 - 3:00 Seismic correlations measured by an underground array in the former Homestake mine – Jan Harms
 - 3:15 Non-equilibrium fluctuations in gravitational wave detectors – Livia Conti

6. **GW Searches (Results/In Progress) 4:00-5:45, Pupin 428 (Chair: Jolien Creighton)**
 - 4:00 Searching for spinning supermassive black hole binaries using a genetic algorithm - Antoine Petiteau
 - 4:15 Status of the search for gravitational wave signals from high mass compact binary coalescences in LIGO S5 data - Craig Robinson
 - 4:30 Searches for gravitational waves from compact binary coalescences by the LIGO and Virgo Collaborations – Anand Sengupta
 - 4:45 A Bayesian search for gravitational wave ringdowns associated with pulsar timing glitches - James Clark
 - 5:00 Einstein@Home search for periodic gravitational waves in early S5 LIGO data - Holger Pletsch
 - 5:15 Searching for monochromatic signals in the ALLEGRO gravitational wave detector data - Carlos Frajuca
 - 5:30 Estimating the spatial structure of a Stochastic Gravitational Wave Background - Stefan Ballmer

Wednesday evening

7:00-9:00

Conference Dinner at American Museum of Natural History

Please use entrance on 81st street between Columbus Avenue and Central Park West.
(Take Subway #1 to 79th street station and walk two blocks East.)

Thursday AM (June 25) – **Lerner Hall, Auditorium**

Session Chair: Andrea Lommen

8:00-8:30 **Wake-up Lecture: Theoretical aspects of modified gravity theories (Alberto Nicolis, Columbia University)**

8:30-9:15 Invited: Education and Outreach (Fred Raab)

9:15-12:30 Pulsar Timing Array Science and Instrumentation

9:15 The North American Nanohertz Observatory for Gravitational Waves (NANOGrav): Building a Galactic Scale Gravitational Wave Observatory – Fredrick Jenet

9:34 The European Pulsar Timing Array -- Observatories and Instrumentation – Robert Ferdman

9:53 The Parkes Pulsar Timing Array, Long-term Millisecond Pulsar Timing and Prospects for GW Detection – Joris Verbiest

10:12-10:36 Coffee Break

Session Chair: Frederique Marion

10:36 Key Challenges and Advances for High-precision Pulsar Timing – Paul Demorest

10:55 Detecting Gravitational Waves with Interferometry and Pulsar Timing – Larry Price

11:14 Prospects for Gravitational Wave detection with forthcoming Pulsar Timing Arrays – Alberto Sesana

11:33 Bayesian analysis of pulsar timing data to put limits on the gravitational-wave background – Rutger van Haasteren

11:52 Gravitational Wave Burst Detection Using pulsars – Andrea Lommen

12:11 Sky localization of burst sources with networks of GW detectors – Sergei Klimenko

Thursday PM

Parallel Sessions (Coffee will be served 4:00-4:30)

1. GW Signals and Data Analysis Issues, 2:00-3:30, Pupin 329 (Chair: Peter Shawhan)

2:00 The Impact of Mergers on Measurement Accuracy with LISA - Sean McWilliams

2:15 Exploring the Use of Numerical Relativity Waveforms in Burst Analyses of Binary Black Hole Mergers - Sebastian Fischetti

2:30 A new phenomenological waveform family for modeling non-precessing spinning black-hole binaries – Lucia Santamaria

2:45 Searching for spinning massive black holes in the LISA data stream - Ed Porter

3:00 Probing non-tensorial polarizations of stochastic gravitational-wave backgrounds - Atsushi Nishizawa

3:15 Searching for multi-day transient gravitational waves from rapidly rotating neutron stars - Stefanos Giampanis

2. Multimessenger Astronomy, 3:30-4:00 followed by 4:15-5:15, Pupin 329 (Chair: Patrick Sutton)

3:30 Reducing the gravitational wave parameter space for LMXBs : Deep searches for X-ray pulsations – Chris Messenger

3:45-4:00 Seeing with three sites – Anthony Searle

4:15 Reconstruction of GW Bursts with LIGO-Virgo network – Marco Drago

4:30 Coincident search for gravitational-wave and neutrino signals from core-collapse supernovae – Isabel Leonor

4:45 Exploring short gamma-ray bursts as gravitational wave standard sirens: Observational prospects - Samaya Nissanke

5:00 Monitoring Sco X-1 with RXTE and gravitational wave detectors - Kazuhiro Hayama

- 3. Numerical Relativity, 5:15-6:45, Pupin 329 (Chair: Deirdre Shoemaker)**
 5:15 Results of the Numerical INJECTION Analysis (NINJA) Project - Steve Fairhurst
 5:30 Gravitational waves and cosmological back reaction – Fabrice Debbasch
 5:45 The asymptotic form of gravitational waves from binary black hole simulations - Denis Pollney
 6:00 Dynamical gauge conditions for binary black hole simulations with higher mass ratios - Doreen Mueller
 6:15 Numerical evolution and gravitational radiation in the Fully Constrained Formulation (FCF) – Isabel Cordero-Carrion
 6:30 Zoom whirl orbits of black holes - Roman Gold
- 4. Detector Technology I, 2:00-4:00, Pupin 301 (Chair: Daniel Shaddock)**
 2:00 Performance of the ANU Travelling-wave Squeezing Cavity for the LIGO H1 Squeezing Injection Experiment – Sheon Chua
 2:15 Status of the H1 Squeezer Experiment - Daniel Sigg
 2:30 Testing the Suppression of Parametric Instability by Optical Interference of Transverse Modes – Lucienne Merrill
 2:45 Implementation of arm locking on LISA – Kirk McKenzie
 3:00 LISA Pathfinder interferometry techniques – Felipe Guzman
 3:15 Fiber laser development for LISA - Kenji Numata
 3:30 Low Frequency Stabilization of Laser Intensity and Frequency Using Optical Fiber – Kakeru Takahashi
 3:45 Multitechnique investigation of Ta₂O₅ films and bulk samples: comparison of optical, chemical and morphological properties – Mirko Prato, presented by Gianluca Gemme
- 5. Detector Technology II, 4:15-6:45, Pupin 301 (Chair: Szabolcs Marka)**
 4:30 The monolithic suspension for the interferometer Virgo – Matteo Lorenzini
 4:45 Overview of monolithic suspension work for Advanced LIGO – Marielle Van Veggel
 5:00 Measurement of angular anti-spring effect in optical cavity by radiation pressure – Shihori Sakata
 5:15 Low frequency dissipative effects in metal flexures – Riccardo DeSalvo
 5:30 Strong reduction of laser power noise by means of a Kerr nonlinear cavity – Alexander Khalaidovski
 5:45 Thermal-noise-limited underground interferometer – Kazuhiro Agatsuma
 6:00 Transfer of an Optical Phase Reference for a Lock Acquisition Interferometer – Adam Mullavey
 6:15 Testing Advanced LIGO length sensing and control scheme at the Caltech 40m interferometer – Yoichi Aso
 6:30 The AEI 10m prototype interferometer - Stefan Goßler
- 6. Understanding Detector Performance and Ground-Based Detector Designs, 2:00-4:00, Pupin 428 (Chair: Peter Saulson)**
 2:00 Present status of the spherical antenna MiniGrail – Giorgio Frossati
 2:15 Absolute calibration of the LIGO test mass displacement actuators – Richard Savage
 2:30 Virgo calibration and reconstruction of the gravitational wave strain $h(t)$ during VSR1 – Loic Rolland
 2:45 Multi-field wavefront sensor for measuring thermal effects in a gravitational wave detector – Richard Day
 3:00 The transition to GEO HF – Harald Lueck
 3:15 Design of non-degenerate recycling cavities for Advanced Virgo – Massimo Granata
 3:30 Design of stable recycling cavities for Advanced LIGO – Muzammil Arain
 3:45 Aligning advanced detectors – Lisa Barsotti

7. Data Analysis Methods, 4:30-6:45, Pupin 428 (Chair : Ik Siong Heng)

- 4:30 Searching for gravitational waves from pulsars in binary systems: An all sky search - Siphon van der Putten
4:45 Cross-Correlation Searches for Periodic Gravitational Waves - John Whelan
5:00 Searching for stochastic backgrounds in the third round of the Mock LISA Data Challenge - Emma Robinson
5:15 Population boundaries for compact white-dwarf binaries in LISA's amplitude-frequency domain - Ravi Kumar Kopparapu
5:30 Searches of galactic binary systems with LISA using a Delayed-Rejection Markov-Chain Monte-Carlo approach - Miquel Trias
5:45 A solution to the LISA data analysis problem – Neil Cornish
6:00 A Comprehensive Bayesian Solution to the Gravitational Wave Detection Problem - Tyson Littenberg
6:15 MaxEnt: Detecting things that go bump in the night - Ruxandra Bondarescu
6:30 Detection and parameter estimation with amplitude-corrected waveforms - David McKechnan

Thursday Evening – Pupin 301

- 6:45pm - 7:25pm Wine, Cheese, Pizza, Informal discussion
7:30pm - 8:00pm Mark Devlin, BLAST PI, Astrophysics Talk
8:00pm - 9:15pm BLAST! Movie Screening
9:15pm - 9:45pm Questions and Answers to the director and PI
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Friday AM (June 26) – Note: ROOM CHANGE: Pupin 301

Session chair: Albert Lazzarini

8:00-8:30 Wake-up Lecture: The XENON Dark Matter Search (Elena Aprile, Columbia University)

8:30-9:15 Invited: Third Generation Detectors and their Science Reach (Michele Punturo)

9:15-12:40 Third Generation Detectors and Ideas

- 9:15 Advanced LIGO: The Next Generation of Gravitational Wave Detection – Gregg Harry
9:35 Building blocks for future detectors – Roman Schnabel
9:55 Optical design for advanced VIRGO and beyond – Andreas Freise
10:15-10:40 Coffee Break
Session Chair: Yoichi Aso
10:40 Thermal noise in 3rd generation detectors – Ronny Nawrodt
11:00 Experimental demonstration of a triple-suspended, diffractively-coupled Fabry-Perot cavity – Matthew Edgar
11:20 Study of coating mechanical losses in view of reducing mirror thermal noise in gravitational wave detectors – Raffaele Flaminio
11:40 Squeezed Light for Gravitational Wave Astronomy (*GWIC Thesis Prize presentation*) – Henning Vahlbruch
12:00 Damping Parametric Instabilities – John Miller
12:20 Probing opto-mechanical correlations between 2 optical beams down to the quantum level – Pierre-Francois Cohadon

12:40 -1:00 Summary: Jim Hough