

SIXTH ANNUAL
GMT COMMUNITY SCIENCE MEETING

SPONSORED BY GMT CORPORATION

STARS

BIRTH & DEATH

2018 **SEPTEMBER 13-15**
Hilton Hawaiian Village Waikiki Beach Resort
Honolulu, Hawaii

GMT Corporation • Pasadena, CA • Las Campanas, Chile

SCIENTIFIC ORGANIZING COMMITTEE

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GMTO/Carnegie Observatories

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Kyung Hee University

Lucas Macri

Texas A&M University

Raffaella Margutti

Northwestern University (co-chair)

Stella Offner

The University of Texas at Austin

Dan Scolnic

University of Chicago



**GIANT MAGELLAN
TELESCOPE**

Welcome to the Sixth Annual GMT Community Science Meeting

While stars spend most of their lives as stable, fusion-powered objects, stellar birth and death involve some of the most dramatic and diverse physical processes known to astrophysicists. Stellar beginnings are shrouded in dust and are difficult to observe, and the next generation of large telescopes will offer transformative opportunities to understand this first chapter of the star formation story. Stellar death is often explosive, and new data on transient objects offer great opportunities for advancing our understanding of the last chapter of the stellar story. This conference brings together experts in the fields of star formation and stellar disruptions, eruptions and explosions. We will focus on key open questions that can be solved in the upcoming era of extremely large telescopes.

Conference Support

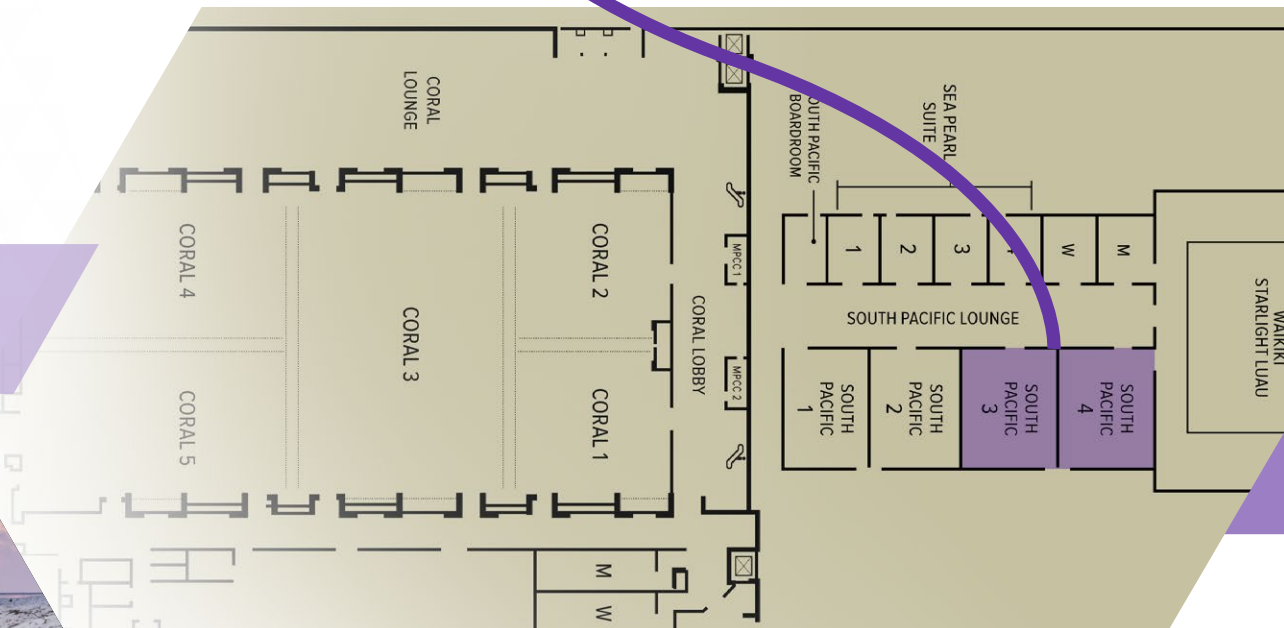
Karla Russell (626) 429-9445

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GENERAL INFORMATION

- ★ Presentations and posters will be in the **Mid-Pacific Conference Center, South Pacific Rooms 3 & 4**
- ★ Breakfast will not be provided
- ★ Lunch will be provided in the **Rainbow Suites & Patio**
- ★ Conference Banquet will be Friday from 6:30 – 8:30 pm in the **Rainbow Suites & Patio**
- ★ Snacks, coffee, and tea will be available during the meeting
- ★ Photos taken at the meeting will be available at www.gmtconference.org/gallery
- ★ Please use **#GMT18** to share your experience on social media

SPEAKER INFORMATION

- ★ Please provide your talk on a USB stick to Bob Goodrich no later than the break before your session. You will not be able to project from your personal laptop.
- ★ Files can be in PowerPoint, Keynote, or PDF format. Please transfer or embed any video files.



AGENDA

Wednesday – Thursday

Wednesday

7:00 – 9:00 pm

Welcome – Refreshments & Hors d'oeuvres
Rainbow Suites & Patio

Thursday

8:50 – 9:00 am

Josh Eisner & Raffaella Margutti
Welcome

9:00 – 9:30 am

Rebecca Bernstein
GMT/ELTs Overview

Session 2: IMF Origin & Implications

Session Chair: Josh Eisner

9:30 – 9:50 am

Paul Clark (Invited)

9:50 – 10:10 am

Daniel Krowlikowski

Multiple Stellar Populations in Taurus and their 6-Dimensional Structure

10:10 – 10:30 am

Raquel Martinez

Searching for Wide Companions and Identifying Circum(sub)stellar Disks through PSF-Fitting of Spitzer/IRAC Archival Data

10:30 – 10:50 am

Break [light snacks provided]

Session 3: IMF & Stellar Death

Session Chair: Raffaella Margutti

10:50 – 11:10 am

Tuguldur Sukhbold (Invited)

Islands of Explodability in a Sea of Implosions

11:10 – 11:30 am

Dennis Alp

The 30-Year Search for the Compact Object in SN 1987A

11:30 – 11:50 am

Naveen Yadav

On the properties of convection in the Si-O layers of a massive star prior to collapse

12:00 – 1:00 pm

Lunch [provided in Rainbow Suites & Patio]





Thursday Session 4: High-Mass Stars

Session Chair: Mark Krumholz

- 1:00 – 1:20 pm **Anna Rosen (Invited)**
The Formation of Massive Stars in Theory and Practice
- 1:20 – 1:40 pm **Jason Kalirai**
Which Stars Go Boom?
- 1:40 – 2:00 pm **Emily Levesque**
Red Supergiants: New Perspectives on Dying Stars
- 2:00 – 2:20 pm **Ragnhild Lunnan (Invited)**
- 2:20 – 2:40 pm **Daiane Seriacopi**
Modeling the Envelopes of B[e] Supergiants
- 2:40 – 3:00 pm **Grant Williams**
Supernova Polarimetry in the Era of Extremely Large Telescopes
- 3:00 – 3:20 pm **Break (light snacks provided)**

Session 5: Disks & Jets

Session Chair: Adam Kraus

- 3:20 – 3:40 pm **Megan Reiter (Invited)**
Signposts of Star Formation — Disks and Jets
- 3:40 – 4:00 pm **Serena Kim**
Probing Effects of External UV Radiation on Circumstellar Materials of Young Stellar (and Substellar) Objects
- 4:00 – 4:20 pm **Rodrigo Nemen (Invited)**
- 4:20 – 4:40 pm **Tuomas Kangas**
Late-Time Afterglows of Energetic Long Gamma Ray Bursts and Inferences on the Jet Physics
- 4:40 – 5:00 pm **Alexander Kreplin**
Resolving the Origin of the Hydrogen-Line Emission in YSOs with Near-Infrared Interferometry
- 5:30 – 7:30 pm **Astro2020 discussion**
Refreshments & hors d'oeuvres provided



AGENDA

Friday – Saturday

Friday

Session 6: Astrochemistry & Nucleosynthesis

Session Chair: Wen-fai Fong

9:00 – 9:20 am

Ilse Cleeves (Invited)

Linking Astrochemistry in Protoplanetary Disks with the Atmospheric Composition of Exoplanets

9:20 – 9:40 am

Yao-Lun Yang

Unveiling the Complex Organic Molecules and Infalling Envelope of the Class 0 Protostar BHR 71

9:40 – 10:00 am

Ryan Chornock (Invited)

10:00 – 10:15 am

Poster Pops I (One-minute presentations summarizing each poster)

10:15 – 10:50 am

Break (light snacks provided)

Session 7: Protostellar Properties & Evolution

Session Chair: Mark Krumholz

10:50 – 11:10 am

Mike Dunham (Invited)

Protostellar Properties & Evolution

11:10 – 11:30 am

Patrick Sheehan

ALMA Constraints on Embedded Disk Structures and Masses as Seen by CARMA

11:30 – 11:50 am

Marion Weinen

Temperature and 3-D Distribution of High-Mass Star-Forming Regions in the Inner Galaxy

12:00 – 1:00 pm

Lunch (provided in Rainbow Suites & Patio)

Session 8: Binaries

Session Chair: Raffaella Margutti

1:00 – 1:20 pm

Kaitlin Kratter (Invited)

The Origin and Early Evolution of Binary Stars

1:20 – 1:40 pm

Trent Dupuy

Ultracool Dwarf Dynamical Masses: Leaving the Old Neighborhood with GMT AO

1:40 – 2:00 pm

Aaron Rizzuto

Dynamic Mass Constraints of Stellar Evolution from Young Binaries

2:00 – 2:20 pm

Sung-Chul Yoon (Invited)

Stellar Deaths in Massive Binary Systems

2:20 – 2:40 pm

Ryan Lau

The Unusual Case of the Impostor Supernova 2010da a.k.a. NGC 300 ULX-1

2:40 – 2:55 pm

Poster pops II (One-minute presentations summarizing each poster)

2:55 – 3:20 pm

Break (light snacks provided)



Friday **Session 9: Star Formation & Death in Extreme Environments**

Session Chair: Craig Wheeler

- 3:20 – 3:40 pm **Jessica Lu (Invited)**
Star Formation Differs in Extreme Environments
- 3:40 – 4:00 pm **Matthew Hosek**
The Initial Mass Functions of the Arches and Quintuplet Clusters: Testing the Impact of the Galactic Center Environment
- 4:00 – 4:20 pm **Breann Sitarski**
Merging Binaries in the Galactic Center: Progenitors to the S-Star Cluster?
- 4:20 – 4:40 pm **Dan Milisavljevic (Invited)**
GMT Will Power the Supernova Evolution Revolution
- 4:40 – 5:00 pm **Stuart Ryder**
Supernovae: Lost & Found
- 5:00 – 5:15 pm **Group Photo**
- 6:30 – 8:30 pm **Conference Banquet (Rainbow Suites & Patio)**

Saturday **Session 10: Feedback/Unusual Transients**

Session Chair: Nat Butler

- 9:00 – 9:20 am **Megan Ansdell (Invited)**
Unusual Transients in Star and Planet Formation
- 9:20 – 9:40 am **Pawan Kumar**
The Radiation Mechanism for Fast Radio Bursts
- 9:40 – 10:00 am **Ben Shappee (Invited)**
Observations of Unusual Transients
- 10:00 – 10:20 am **Tony Piro (Invited)**
Using Transients to Probe the Border Between Neutron Stars and Black Holes
- 10:20 – 10:50 am **Break (light snacks provided)**

Session 11: Stellar Death as Probes

Session Chair: Wen-fai Fong

- 10:50 – 11:10 am **Dan Perley (Invited)**
Extreme Transients as Probes of the Dynamic Universe
- 11:10 – 11:30 am **Tomoya Kinugawa**
Remnants of First Stars for the Gravitational Wave Source
- 11:30 – 11:50 am **Decker French**
The Unusual Host Galaxies of Tidal Disruption Events
- 11:50 – 12:20 pm **Craig Wheeler (Invited)**
Conference Summary
- 12:20 pm **Lunch (to-go box lunches provided)**

POSTERS



POSTER POPS I

Aaron Rizzuto

Dynamical Mass Constraints of Stellar Evolution from Young Binaries

Gagandeep Anand

Tip of the Red Giant Branch Distances to Nearby Galaxies

Matheus Bernini Peron

Evolution of Massive Stars using MESA

Yashpal Bhulla

Variability of flux in Z-track Neutron star low mass X-ray binaries

Ellen Costa de Almeida

Atmospheric Parameters of M Dwarfs in the Solar Neighborhood

Lorena Do Carmo Jesus

The role of gravity in the turbulence and magnetic fields in star formation regions

Samuel Factor

Kernel-Phase Interferometry for Super-Resolution Detection of Faint Companions

Vahid Golkhou

Real-time Classification of ZTF/LSST Streaming Observations

Hideyuki Hideyuki Won Lee

Study on the origin of brown dwarfs with GMT

UiCheol Jang

Thick accretion disk and its super Eddington luminosity around spinning black holes or neutron stars

Tuomas Kangas

Late-time afterglows of energetic long gamma ray bursts and inferences on the jet physics

Liangduan Liu

Energy Sources of Superluminous Supernovae





POSTER POPS II

Ann Merchant Boesgaard

Young Star Clusters

Abhisek Mohapatra

Physical conditions in high- z triple ionized carbon: origin and evolution

Sunkyung Park

High-resolution spectral observations of a periodic variable protostar, EC 53

Nickalas Reynolds

L1448, Exploring Protostellar Feedback Region

Michael Tucker

Type Ia Supernovae: Nebular Phase Science with the GMT

Hideyuki Umeda

SN1987A progenitor in a merger model: evolution and nucleosynthesis

Andrew Vanderburg

Planetary Destruction around Dying Stars

Masaki Yamaguchi

Statistical study of hostless supernovae discovered via the Hyper Suprime-Cam SSP Transient Survey

Sung-Yong Yoon

Near-IR Spectroscopic Evidence of an Accretion Burst in an Embedded Protostar IRAS 16316-1540

Shuai Zha

G-wave and Neutrino Signal from Accretion-induced Collapse of White Dwarfs

ZhoujianZhang

A Pan-STARRS1 Proper-Motion Survey for Young Brown Dwarfs in the Nearest Star-Forming Regions

Aloha!

Poojan Agrawal, Swinburne University of Technology
Dennis Alp, KTH Royal Institute of Technology
Gagandeep Anand, Institute for Astronomy, University of Hawaii
Megan Ansdell, UC Berkeley
Andrew Benson, Carnegie Observatories
Matheus Bernini Peron, Obs. do Valongo – Univ. Federal do Rio de Janeiro
Rebecca Bernstein, GMTO/Carnegie Observatories
Melina Cecilia Bersten, IALP-UNLP
Yashpal Bhulla, PAHER University, Udaipur
Ann Merchant Boesgaard, Institute for Astronomy, University of Hawaii
Amber Brion, Iowa State University
Nathaniel Butler, Arizona State University
Ilaria Caiazzo, University of British Columbia
Barbara Castanheira Endl, Baylor University/UT Austin
Ke-Jung (Ken) Chen, Academia Sinica Inst. of Astronomy and Astrophysics
Ryan Chornock, Ohio University
Paul Clark, Cardiff University
Lauren Cleeves, University of Virginia
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Lorena Do Carmo Jesus, University of Wisconsin-Madison
Michael Dunham, State University of New York at Fredonia
Trent Dupuy, Gemini North
Josh Eisner, University of Arizona
Michael Endl, The University of Texas at Austin
Samuel Factor, The University of Texas at Austin
James Fanson, GMTO
Wen-fai Fong, Northwestern University
Decker French, Carnegie Observatories
Richard Galvez, New York University
Vahid Golkhou, University of Washington
Bob Goodrich, GMTO
Matthew Hosek, UCLA
Daniel Huber, Institute for Astronomy, University of Hawaii
Cynthia Hunt, Carnegie Institution for Science
Narae Hwang, Korea Astronomy and Space Science Institute (KASI)
UiCheol Jang, ChungNam National University
Damien Jemison, GMTO
Jason Kalirai, Space Telescope Science Institute
Tuomas Kangas, Space Telescope Science Institute
Jinyoung Serena, Kim University of Arizona
Tomoya Kinugawa, University of Tokyo
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Jeong-Eun Lee, Kyung Hee University

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Liangduan Liu, Nanjing University/University of Nevada Las Vegas
Michael Liu, Institute for Astronomy, University of Hawaii
Jessica Lu, UC Berkeley
Ragnhild Lunnan, Stockholm University
Raffaella Margutti, Northwestern University
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Patrick McCarthy, GMTO
Dan Milisavljevic, Purdue University
Rafael Millan-Gabet, GMTO
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Aaron Rizzuto, The University of Texas at Austin
Anna Rosen, Harvard University
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J. Craig Wheeler, The University of Texas at Austin
Marion Wienen, University of Exeter
Grant Williams, MMT Observatory/University of Arizona
Jonathan Williams, Institute for Astronomy, University of Hawaii
Naveen Yadav, Max Planck Institute For Astrophysics
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Sung Chul Yoon, Seoul National University
Sung-Yong Yoon, Kyung Hee University
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