



**Astronomical Optical Interferometry
from the Lunar Surface**

**Date November 18-22, 2024
Overview Schedule**

**Monday, November 18, 2024
Chen 100 Lecture Hall - Caltech**

**Short Course: Interferometry Lands on the Moon
Introductory Lectures - Open to all interested students, researchers and faculty**

| Time | Event | Speaker |
|---------------|--|-------------------------------------|
| 8:15 - 8:45 | Coffee and Refreshments | |
| 8:45 - 9:00 | Logistics and Introduction | Harriet Brettle Gerard van Belle |
| 9:00 - 9:45 | Short Course Lecture #1: Short primer on optical interferometry | Michelle Creech-Eakman |
| 9:45 - 10:30 | Short Course Lecture #2: Lunar opportunities: Artemis, international | Jon Morse |
| 10:30 - 11:00 | Break | |
| 11:00 - 11:45 | Short Course Lecture #3: Optical interferometry science briefing | Gail Schaefer |
| 11:45 - 12:30 | Short Course Lecture #4: Lunar environment: the 30,000' view | Lori Pigue |
| 12:30 - 1:30 | Short Course Ends: Informal Lunch is provided outside Chen Institute | |

**Invitation-Only Workshop Begins
Keck Center - Think Tank, Room 155**

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| 1:30 - 1:45 | Walk to Keck Center, pick up badge and welcome packet, find seat in the Think Tank | |
| 1:45 - 2:30 | Workshop Logistics and Introduction to KISS | Harriet Brettle |
| 2:30 - 3:00 | Participant Introductions | Harriet Brettle |
| 3:00 - 3:30 | Study vision and goals for this workshop | Team Leads: Gerard van Belle, Stuart Shalkan, Shri Kulkarni |
| 3:30 - 4:00 | Break | |
| 4:00 - 5:00 | Finalize study vision and workshop goals via plenary discussion | Team Leads |
| 5:00 - 5:30 | Solicitation of Lightning Talks | Team Leads |
| 5:30 - 6:00 | Pack up and walk to dinner | All |
| 6:00 | Dinner at a local Pasadena Restaurant | |

Tuesday, November 19, 2024 - Keck Center - Think Tank, Room 155

Why the Moon? Why Not?

| Time | Event | Speaker |
|---------------|--|---|
| 8:00 - 8:30 | Institute Opens - FREE THINK TIME | |
| 8:30 - 9:00 | Coffee and Refreshments at Keck Center | |
| 9:00 - 9:05 | Logistics and Team Lead Goals for the Day | Harriet Brettle and Team Leads |
| 9:05 - 9:30 | Review of Day 1 Inputs - workshop goals and defining success | Gerard van Belle |
| 9:30 - 9:45 | Lightning Talk: Surviving the Lunar Night | Mark Panning |
| 9:45 - 10:30 | The Great Debate - space vs. ground vs. lunar interferometry | John Monnier, Gerard van Belle, Gail Schaefer |
| 10:30 - 11:00 | Break | |
| 11:00 - 11:15 | Introduction to KISS Breakout Sessions | Harriet Brettle |
| 11:15 - 12:30 | Breakout Session 1: - Science drivers - Lunar environment - Interferometry architectures | Groups |
| 12:30 - 2:00 | Group Picture and Lunch at Keck Center | |
| 2:00 - 2:45 | Report outs from breakout groups | Groups |
| 2:45 - 3:30 | Lightning Talks: - State of the art for lunar interferometry (including past mission concepts) - State of the art for space-based interferometry - Potential sites on the moon | David Mozurkewich David Leisawitz + Peter Tuthill May Martin + Tabetha Boyajian |
| 3:30 - 4:00 | Break | |
| 4:00 - 5:30 | Breakout Session 2: Science Case Development - Precise Characterization of Exoplanets - Stellar and Substellar Astrophysics - High Energy and Extragalactic Astronomy | Groups |
| 5:30 - 7:30 | POSTER SESSION and Informal dinner at the Keck Center (dinner starts at 6:30 pm) | |

Wednesday, November 20, 2024 - Keck Center - Think Tank, Room 155

Highway to the Moon

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|---------------|--|--|
| 8:00 - 8:30 | Institute Opens - FREE THINK TIME | |
| 8:30 - 9:00 | Coffee and Refreshments at Keck Center | |
| 9:00 - 9:15 | Logistics and Team Lead Goals for the Day | Harriet Brettle and Team Leads |
| 9:15 - 9:45 | Report Outs from Breakout Groups | Groups |
| 9:45 - 10:30 | Plenary Discussion, Selection of Breakout Groups and Topics | All |
| 10:30 - 11:00 | Break | |
| 11:00 - 11:45 | Group Pulse : "Taking Away" & "Want to Accomplish Yet" | Group |
| 11:45 - 12:30 | Plenary Session - Workshop Findings and Report outline - Review of ideas and next steps - Importance of Illustrations - KISS Gallery | All |
| 12:30 - 2:00 | Lunch at the Athenaeum | |
| 2:00 - 3:30 | Breakout Session 3 - Revisiting the Science Cases - Precise Characterization of Exoplanets - Stellar and Substellar Astrophysics - High Energy and Extragalactic Astronomy | All |
| 3:30 - 4:00 | Break | |
| 4:00 - 4:45 | Report outs from breakout groups | Groups |
| 4:45 - 5:30 | Lightning Talks: - HWO Precursor Science - opportunities - Eric Mamajek and Stuart Shaklan - Lessons learnt from incremental space science - Paul Niles - Lunar infrastructure reality check - Kevin Hubbard | Eric Mamajek + Stuart Shaklan Paul Niles Kevin Hubbard |
| 5:30 | Workshop Day #3 Ends | All |
| 6:00 | Dinner on your own | |

Thursday, November 21, 2024 - Keck Center - Think Tank, Room 155

Sticking the Landing

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|---------------|--|--------------------------------|
| 8:00 - 8:30 | Institute Opens - FREE THINK TIME | |
| 8:30 - 9:00 | Coffee and Refreshments at Keck Center | |
| 9:00 - 9:15 | Logistics and Team Lead Goals for the Day | Harriet Brettle and Team Leads |
| 9:15 - 9:45 | KISS Outputs - Final Report, Stakeholders including international partnerships | Harriet Brettle |
| 9:45 - 10:30 | Final Report - writing sprints | All |
| 10:30 - 11:00 | Break | |
| 11:00 - 12:30 | Breakout Session 4 - Technology: - Night Operations - Beam Transport - fiber vs. free space - Astrometry configuration | All |
| 12:30 - 2:00 | Lunch on your own | |
| 2:00 - 2:30 | FREE THINK TIME (individual, or self organizing small groups) | All |
| 2:30 - 3:15 | Report outs from breakout groups | Groups |
| 3:15 - 3:30 | Plenary Group Discussion: Path Forward for Collaboration, Discussion on future projects | All |
| 3:30 - 4:00 | Break | |
| 4:00 - 5:30 | Breakout Session 5: - Instrument technology roadmap - Mission roadmap - Workshop recommendations | Groups |
| 5:30 | Workshop Day #4 Ends | All |
| 6:00 | Closing Dinner at the Athenaeum | |

Friday, November 22, 2024 - Keck Center - Think Tank, Room 155**Implementing the Inevitable**

| Time | Event | Speaker |
|---------------|---|--------------------------------|
| 8:00 - 8:30 | Institute Opens - FREE THINK TIME | |
| 8:30 - 9:00 | Coffee and Refreshments at Keck Center | |
| 9:00 - 9:15 | Logistics and Team Lead Goals for the Day | Harriet Brettle and Team Leads |
| 9:15 - 10:30 | Breakout Groups Report Out and Discussion | All |
| 10:30 - 11:00 | Break | |
| 11:00 - 11:30 | Final Report - Status Check | |
| 11:30 - 12:30 | Informal Workshop Small Group - Report Drafting Time | All |
| 12:30 - 2:00 | Lunch at the Keck Center | |
| 2:00 - 3:00 | Open Discussion of Workshop Recommendations | All |
| 3:00 - 3:30 | Open Discussion of Path Forward including assigning of action items | All |
| 3:30 - 4:00 | Break | |
| 4:00 - 5:00 | Workshop Closeout | Harriet Brettle |
| 5:00 | Institute Closes | |