

SOFIA Vision Workshop
CALTECH, Beckman Institute Auditorium
December 6, 2007

7:30 - 8:15 Coffee and rolls

Plenary Session

Chair: Karl Menten, Max-Planck Institute for Radioastronomy, Bonn

8:15 - 8:30 SOFIA observatory status

Bob Meyer SOFIA Project Manager, NASA Dryden

8:30 - 9:00 SOFIA science capabilities

Eric Becklin SOFIA Chief Scientist, USRA/UCLA

9:00 - 9:40 Plenary: SOFIA science opportunities to 2020

Ewine van Dishoeck, Leiden Observatory/MPE

9:40 - 9:55 BREAK

Session 1: Technology for Heterodyne Spectroscopy

Chair: Andrew Harris, U. Maryland

9:55 - 10:10 Terahertz Quantum Cascade Lasers

Michael Wanke, Sandia

10:10 - 10:40 Terahertz receivers with superconducting mixers and quantum cascade lasers

Jianrong Gao, SRON

10:40 - 10:55 THIS: an ultrahigh resolution infrared heterodyne receiver for SOFIA

Rudolf Schieder, U. Cologne

10:55 - 11:10 Terahertz mixers using superconducting tunnel junctions

Alexandre Karpov, Caltech

11:10 - 11:25 Terahertz array receivers (invited)

Chris Walker, U. Arizona

11:25 - 11:40 BREAK

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Session 2: The Interstellar Medium

Chair: Jürgen Stutzki, U. Köln

11:40 - 12:10 Far-Infrared spectroscopy of the interstellar medium (invited)

Ted Bergin, U. Michigan

12:10 - 12:40 Infrared cooling lines of the interstellar medium (invited)

Mark Wolfire, U. Maryland

12:40 - 13:00 Polycyclic aromatic hydrocarbons (invited)

Els Peeters, U. Western Ontario

13:00 - 13:15 The lifecycle of interstellar dust

Eli Dwek, NASA/GSFC

13:15 - 14:00 CATERED LUNCH

Session 3: Star formation: galactic and extragalactic

Chair: Charles Lada, Harvard-Smithsonian Center for Astrophysics

14:00 - 14:30 Galactic Star Formation and SOFIA (invited)

Karl Menten, MPIfR Bonn

14:30 - 15:00 Extragalactic Star Formation and SOFIA (invited)

Jean Turner, UCLA

15:00 - 15:15 Spitzer observations of TMC: new targets for SOFIA

L. M. Rebull, IPAC

15:15 - 15:30 Ratio of atomic and molecular gas in M51

M. Hitschfeld, U. Köln

15:30 - 15:45 BREAK

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Session 4: The Solar System

Chair: Chick Woodward, U. Minnesota

15:45 - 16:10 The Kuiper belt and trans-Neptunian objects (invited)

John Stansberry, U. Arizona

16:10 - 16:35 Planetary atmospheres (invited)

Cathy Olkin, Southwest Research Institute

16:35 - 17:00 Comet studies with SOFIA (invited)

Chick Woodward, U. Minnesota

17:00 - 17:25 The solar system as viewed in the far-infrared: what can SOFIA contribute post-Herschel? (invited)

Paul Hartogh, MPI Lindau

17:25 - 19:00 Poster Viewing and Reception

In the yard of the Beckman Institute

P	1	Christine	Allen	Goddard Space Flight Center	Versatile kilopixel bolometer arrays for far infrared imaging, spectroscopy, and polarimetry
P	2	B-G	Andersson	SOFIA/USRA	I present recent results from optical multi-band polarimetry...(no title)
P	3	James	Chervenak	NASA GSFC	Kilopixel Pop-Up Bolometer Arrays for the Atacama Cosmology Telescope
P	4	Markus	Cubick	I. Physikalisches Institut, Universität zu Köln	PDR modelling of the global far-infrared line emission of the MilkyWay
P	5	Peter	Day	JPL	Multiplexable Antenna-Coupled Far-Infrared Detector for Imaging, Polarimetry, and Spectroscopy
P	6	Jessie	Dotson	NASA Ames Research Center	Multi-wavelength Far-IR Polarimetry -- probing physics from dust grains to galaxies

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P	7	Anders	Emrich	Omnisys	Digital spectrometers for (sub)mm radiometer applications
P	8	Urs	Graf	KOSMA, Univ. of Cologne	Phaselocked Quantum Cascade Laser as Local Oscillator for a Terahertz Hot Electron Bolometer Receiver
P	9	Urs	Graf	KOSMA, Univ. of Cologne	SOFIA Terahertz Array Receiver
P	10	Murad	Hamidouche	USRA-NASA Ames Research Center (U. of Illinois)	Circumstellar Disks: Investigating Grain Growth with SOFIA
P	11	Abigail	Hedden	Harvard Smithsonian Center for Astrophysics	Spatial Filters for Quantum Cascade Lasers
P	12	Jeffrey	Hesler	VDI/UVA	Multiplier Based Sources for Frequencies Up To At Least 2 THz
P	13	Wen-Ting	Hsieh	NASA/Goddard Space Flight Center	Cryogenic Detector Technology for Space Science Application
P	14	Heinz-Wilhelm	Hübers	DLR	Heterodyne receiver with quantum cascade laser local oscillator and hot electron bolometric mixer for frequencies above 2 THz
P	15	Luke	Keller	Ithaca College	Performance test results of a mid-infrared grism spectroscopy mode for FORCAST
P	16	Randolf	Klein	UC Berkeley	How do forming stars interact with their surrounding parental cloud?
P	17	Peter	Kroetz	University of Cologne	THIS: An Infrared Ultrahigh Resolution Receiver for SOFIA - Observations
P	18	Marc	Kuchner	NASA Goddard Space Flight Center	Molecular Hydrogen in Protoplanetary disks:the Dark Matter of Planet Formation
P	19	Franck	Marchis	UC-Berkeley/SETI Institute	Stellar Occultations of Small Solar System Bodies with SOFIA
P	20	Chris	Martin	Oberlin College	Tracing gas on its way down to the Galactic Center

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P	21	Doerte	Mehlert	German SOFIA Institute	Pupils, Amateur and professional astronomers search together for Extra Solar Planets
P	22	Rowin	Meijerink	UC Berkeley	Probing Atomic and Molecular Gas in Protoplanetary Disks
P	23	Margaret	Meixner	STScI Bottom of Form	Spitzer Survey of the Large Magellanic Cloud: Surveying the Agents of a Galaxy's Evolution (SAGE): Initial Results and SOFIA's potential followup
P	24	Chris	Packham	University of Florida	Mid-IR Polarimetry: Furthering SOFIA's Science Vistas
P	25	Dieter	Poelman	University of St. Andrews	Water emission from protoplanetary disks
P	26	Hans-Peter	Roeser	University of Stuttgart	2020 – Will there be Superconducting Material at Ambient Temperature Available?
P	27	Johannes	Staguhn	Univ. of MD & NASA/GSFC	First Field Test Results from GISMO, a 2 mm Camera Using a Backshort-Under-Grid TES Bolometer Array
P	28	Toshiya	Ueta	University of Denver	Investigating Mass Loss in the Evolved Star Circumstellar Shells
P	29	John	Vaillancourt	Caltech	Far-infrared Polarimetry from the Stratospheric Observatory for Infrared Astronomy
P	30	Anastasios	Vayonakis	Caltech	Antenna-coupled Microwave Kinetic Inductance detectors (MKIDs) for mm and submm imaging arrays.
P	31	John	Ward	JPL	Solid-State Heterodyne Technologies for 2-3 THz and Beyond
P	32	Juergen	Wolf	DSI	Improved Sensitivity of the SOFIA Target Acquisition and Tracking Cameras and a High Speed Diagnostic Camera for Telescope Movements in Flight

19:00 - 21:00 WORKSHOP DINNER at the patio of Beckman Institute

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7:30 - 8:00 Coffee and rolls

Session 5: Technology for Imaging and Polarimetry

Chair: Erick Young, U. Arizona

8:00 - 8:30 Infrared Detector Technology (invited)

Harvey Moseley NASA/GSFC

8:30 – 8:45 Prospects for near-infrared imaging arrays

Don Hall, U. Hawaii

8:45 – 9:00 Quantum well intersubband photoconductors (QWISP): A pathway to large-format far-infrared arrays

David Ting NASA/JPL

9:00 - 9:20 Far-infrared polarimetry with SOFIA (invited)

Giles Novak Northwestern

9:20 - 9:35 Mid-infrared polarimetry: new vistas for SOFIA

Christopher Packham U. Florida

9:35 - 9:50 Lunar Occultations at far-infrared wavelengths: a niche for SOFIA?

Paul Harvey U. Texas

9:50 - 10:05 BREAK

Session 6: Galaxy formation and Evolution

Chair: Linda Tacconi, Max-Planck Institute for Extraterrestrial Physics, Garching

10:05 - 10:35 Diagnostics of galaxy evolution with SOFIA (invited)

Gordon Stacey, Cornell

10:35 - 11:05 BLAST as a pathfinder for SOFIA (invited)

David Hughes

11:05 - 11:25 The galactic center (invited)

Mark Morris, UCLA

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11:25 - 11:40 BREAK

Session 7: Technology for Direct-Detection Spectroscopy

Chair: Harvey Moseley, NASA/GSFC

11:40 - 12:10 Direct detection infrared spectroscopy (invited)

John Lacy, U. Texas

12:10 - 12:30 Opportunities in far-infrared spectroscopy with SOFIA (invited)

Jason Glenn, U. Colorado

12:30 - 12:45 A far-infrared mapping spectrometer for SOFIA

Thomas Nikola, Cornell

12:45 - 13:00 Objective prism spectrographs for SOFIA

Dominic Benford, NASA/GSFC

13:00 - 13:15 Hot-electron direct detector arrays for terahertz spectroscopy

Boris Karasik, NASA/JPL

13:15 - 14:00 CATERED LUNCH

Session 8: Extrasolar planets, planet formation, and disks

Chair: Xander Tielens, NASA/Ames

14:00 - 14:30 Extrasolar planet and brown dwarf studies with SOFIA (invited)

Mark Marley, NASA/Ames

14:30 - 15:00 SOFIA observations of protostellar/protoplanetary disks (invited)

Adwin Boogert, IPAC

15:00 - 15:30 From transition disks to debris disks (invited)

Kate Su, U. Arizona

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15:30 - 15:45 BREAK

15:45 - 17:15 Breakout Session: Topical Discussions

17:15 - 18:15 Session Leader Reports

18:15 – 18:35 Workshop Summary

Erick Young, U. Arizona

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Saturday, December 8

9:00 – 20:00 Trip to SOFIA at Dryden

Departure of the shuttle bus from Caltech at 9:00 from the intersection of San Pasqual St. and Hill Av., Pasadena, CA 91106