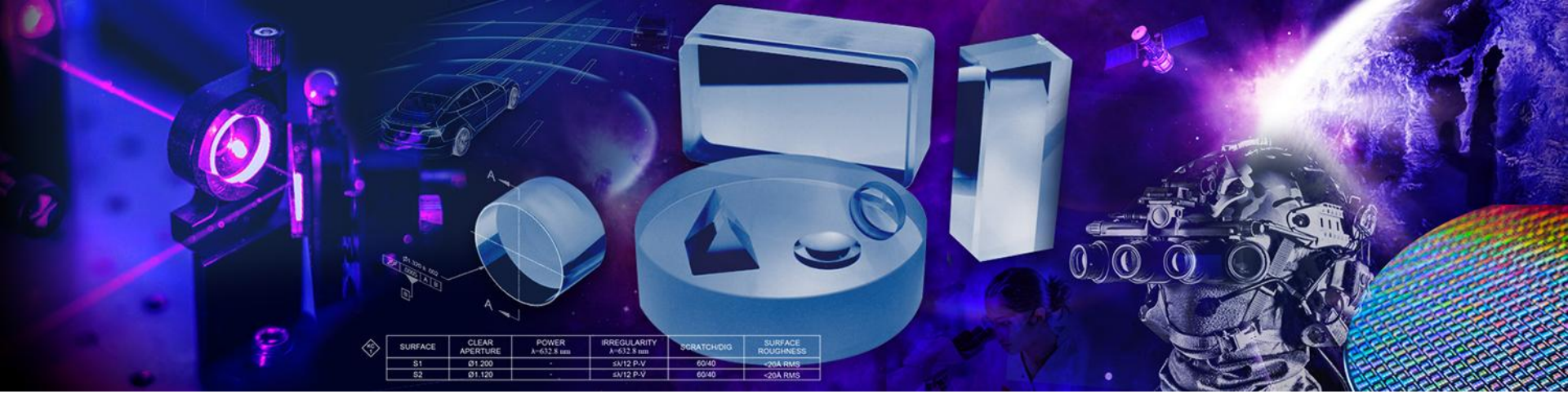
AMERICAN
PRECISION OPTICS
MANUFACTURERS
ASSOCIATION

APOMA

GENERAL MEETING

Wed. Jan 21st, 2026



APOMA is the focal point of American precision optics manufacturing collaboration, facilitating the ongoing exchange of ideas and expertise amongst our diverse membership base. By advancing workforce development, defining industry standards, and sharing process improvements and innovations, APOMA bolsters operational excellence throughout all aspects of optics manufacturing. Membership consists of fabricators, coaters, material scientists, engineers, designers, and educators; who share in the unified goal to **make light work** in the United States.

APOMA

AGENDA

- Introduction
- Board Election
- Financial Report
- Membership / Member Engagement
- Walt Czajkowski Scholarship
- 2026 Tech Workshop
- Guest Speakers

JPL Optics
Brain Monacelli

Oblate Optics
Rajesh Menon

OEOSC
Jennifer Michels

APOMA

BOARD MEMBERS 2025

Zach Hobbs
President

SYDOR OPTICS

Timothy Kennedy
President-Elect

EDMUND OPTICS

Lee Steneken
Past-President

ESCO OPTICS

Dave Mohring
Treasurer

OPTIPRO

Chris Russell
Secretary

UNIVERSAL PHOTONICS

Dr. Alexis Vogt
Academic Member

MONROE COMMUNITY COLLEGE

Michele Stolberg
Admin

Mitzi Brennan
At-Large Member

PUREON

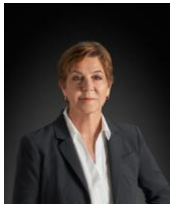
Dave Shelton
At-Large Member

AMERICOM

Brian Myer
At-Large Member

OPTIMAX

CANDIDATES – 1 AT-LARGE BOARD SEAT



Mitzi Brennan

PUREON

David O'Ryan

ECOCLEAN

Michael Feinberg

OPTOTECH

Matt Zabko

BOND OPTICS

Shai Shafrir

CORNING

Matt Gregoire

ACCESS OPTICS

Tim Olsen

OMEGA OPTICAL

Mark Palvino

LIGHTPATH TECHNOLOGIES

Chris Hall

QED TECHNOLOGIES

Travis Wood

LATTICE MATERIALS

Jim Capelakos

THORLABS

Gary Andreski

NGL AMERICA

Welcome to the APOMA board, Matt!

Matt Zabko is the CEO and co-owner of Bond Optics and has spent more than twenty years immersed in the precision optics industry. His career spans small specialty shops, high-volume OEMs, and advanced IR manufacturing environments, giving him a uniquely comprehensive understanding of how optical components are designed, fabricated, measured, inspected, coated, and delivered across commercial and defense applications.

BOARD MEMBERS 2026

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At-Large Member
BOND OPTICS

Dave Shelton
At-Large Member
AMERICOM

Brian Myer
At-Large Member
OPTIMAX

FINANCIAL UPDATE

Dave Mohring - Treasurer

FINANCE REPORT

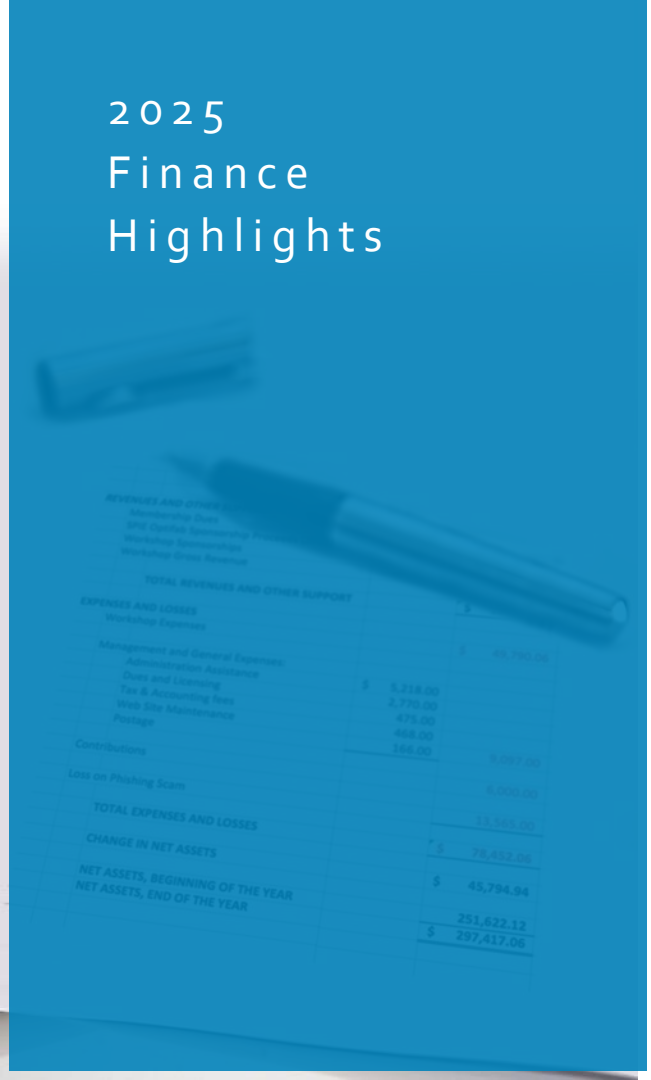
Statement of Activities

For The Year Ended

December 31, 2025

REVENUES AND OTHER SUPPORT			
	Membership Dues		$ 74,000.00
	SPIE Optifab Sponsorship Proceeds (Realized in 2026)		
	Workshop Hotel Deposit Refund		$ 9,072.00
	Bank Sweep Interest		$ 6,085.00
	TOTAL REVENUES AND OTHER SUPPORT		**$ 89,157.00**
EXPENSES AND LOSSES			
	Management and General Expenses:		
	Administration Contract Personnel	$ 94,880.00	
	HubSpot Admin Tigris Consultant	$ 2,975.00	
	Travel,Event, Software Expenses	$ 10,035.00	
	Web Site Host-Maintenance	$ 622.00	
	Board Operating Election/Meetings	$ 100.00	
	Tax & Accounting fees	$ 410.00	
	Bank Service Charge / Fees	$ 3,261.00	
	PW Gen. Mtg, Marketing, C.Contact	$ 475.00	
	Intuit Quickbooks	$ 1,466.00	
	Intuit Tran Fee	$ 3,045.05	
	Office Supply USPS Postage,Fedex	$ 290.00	
		Sub Total	$ 117,559.05
	Morelle APOMA Induction		$ 1,993.00
	Optifab Gathering at Branca		$ 12,084.00
	Optics Golf Cooler Bags		$ 2,763.00
	Contributions OEOSC		$ 5,000.00
	TOTAL EXPENSES AND LOSSES		**$ 139,399.05**
	CHANGE IN NET ASSETS		**$ (50,242.05)**
	NET ASSETS, BEGINNING OF THE YEAR		**$ 380,660.00**
	NET ASSETS, END OF THE YEAR		**$ 330,417.95**

2025 Finance Highlights



> Bank Sweep Account closed September 2025

> 1 year CD at 3.4% for 200K opened September 2025

> Contributed to Optifab Clambake, Golf_CoolerBags, OEOSC

> PW General Meeting and Reception

> DCS event Gathering

> Optifab Member Gathering at Branca Basin

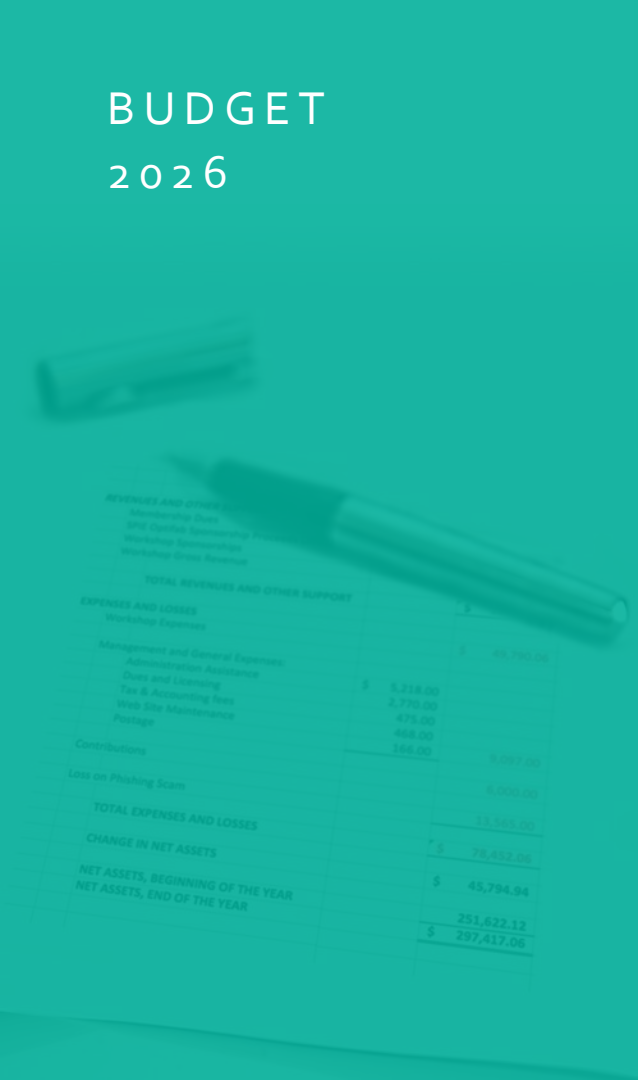
> Congressman Joe Morelle - Honorary Induction - Strathallan

> Executive Director: Yvette Pagano

> Administrative Assistant : Michele Stolberg

> SPIE Support

BUDGET
2026

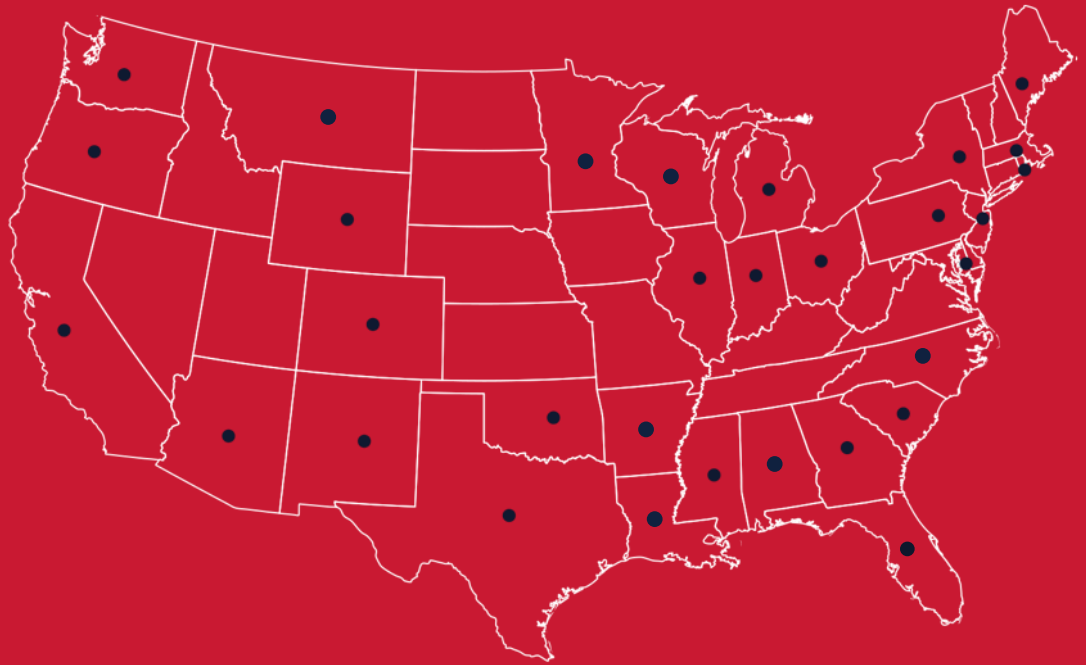


REVENUES AND OTHER SUPPORT				
	Membership Dues			$ 74,000.00
	SPIE Optifab Sponsorship Proceeds (Realized in 2026)			$ 10,000.00
	Workshop Earnings			$ 5,000.00
	CD Interest			$ 5,000.00
		TOTAL REVENUES AND OTHER SUPPORT		**$ 94,000.00**
EXPENSES AND LOSSES				
	Management and General Expenses:			
		Administration Contract Personnel	$120,000.00	
		HubSpot Admin Tigris Consult	$ 500.00	
		Travel,Event, Software Expenses	$ 10,000.00	
		Web Site Host-Maintenance	$ 700.00	
		Board Operating Election/Meetings	$ 100.00	
		Tax & Accounting fees	$ 500.00	
		Bank Service Charge / Fees	$ 100.00	
		PW Gen. Mtg, Marketing, C.Contact	$ 600.00	
		Intuit Quickbooks	$ 1,650.00	
		Intuit Tran Fee	$ 3,000.00	
		Office Supply USPS Postage,Fedex	$ 300.00	
			Sub Total	$ 137,450.00
	Workshop Reception			$ 5,000.00
	Optics Golf Tournament			$ 2,000.00
	Contributions OEOSC			$ 5,000.00
		TOTAL EXPENSES		**$ 149,450.00**
		CHANGE IN NET ASSETS		**$ (55,450.00)**

MEMBERSHIP / MEMBER ENGAGEMENT

Yvette Pagano – Executive Director

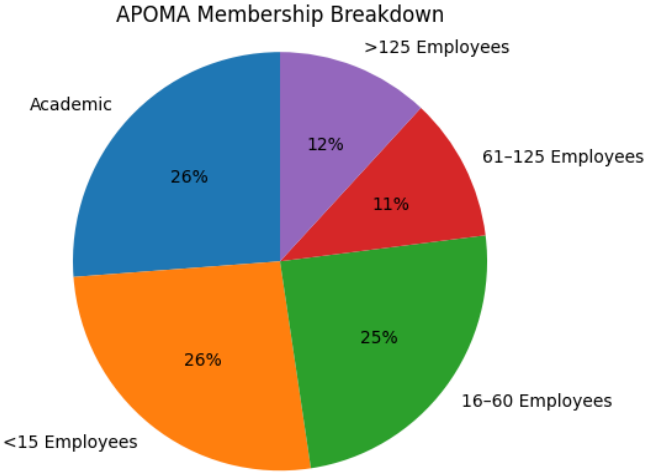
MEMBERSHIP



Employee Count Based on # of USA Employees

126 members

Academic	33
Corporate & Associate	93
Employee Count <15	33
Employee Count 16–60	31
Employee Count 61–12	14
Employee Count >125	15



What is APOMA Doing for Members?

Government Advocacy

- Presence in DC meeting one on one with members of congress
- Facilitating Membership Optics and Photonics Caucus- bipartisan
- 3 new members in cause since Optifab

  Current target:
  - Maggie Goodlander- New Hampshire
- Why do we want this? Insurance and leverage
- Is your representative a member?

Arizona- Edmund Optics PA- Schott Glass NJ- future members?

What is APOMA Doing for Members?

Workforce

- Think about APOMA as “Charlette's web”
- We serve the APOMA members to help upskill and fill pipeline
- Our academic partners especially community colleges are amazing
- We need to get butts in the pews
- Advocate for members, seek funding
- Great example from Corning in Keene, NH
- Walt Czajkowski Scholarship

Sydor Optics Advanced Technology Center @ MCC

Preferred Partners

- Free $$$ - one way you will love APOMA is if we help you get a huge R&D refund
  - Paramount Glass Works
  - Sydor Optics
  - Esco Optics
  - Spica Technologies
  - ER Precision Optics
- We could use a few more preferred partners
  - Precision machine shop
  - Staffing company
  - Plastic Injection Molder
- These PP have been vetted- recommend today- must be willing to give 5-star review

Sam Woolridge with R&K Partners

What is APOMA Doing for Members?

Increasing Member Engagement

- Welcome Page- increase general members
- Social Media Pose
- Private LinkedIn Page
- Site visits and social posts
- Committees- workforce and gov’t relations
- Website enhancement- members only

Bond Optics “Live free or die” NH tour

Contribution Status Update from SPIE

If you are interested in supporting this effort, please click on the link listed on the APOMA website to be taken to SPIE's contribution page, then scroll down to the section detailing the scholarship: **Donate to SPIE – Walter Czajkowski Scholarship** or, email SPIE directly at contribute@spie.org and add "Walter Czajkowski fund" to the subject line of your email.

There is still time to donate! Thank you for your support!

Thank you to those that have already contributed!

Czajkowski Family =	$5,000
Sydor Optics =	$5,000
Edmund Optics =	$,5000
Esco Optics =	$1,500
Accucoat =	$1,500
Optipro=	$1,500
Larsen Equipment Design	$ 500
Total Thus Far	**$20,000**
SPIE match	$20,000

We are at $40,000

Goal $50K Donation period ends Feb. 15th 2026

Walter Czajkowski
SCHOLARSHIP

APOMA BREAK OUT ROOM

Available to APOMA members & guests only

- Meeting space
- Perfect for members not exhibiting
- WiFi access
- Connect with other APOMA members

LOCATION

Room 62 in South Lower Mezzanine
Monday – Thursday

Located off the South hall lobby

In conclusion:

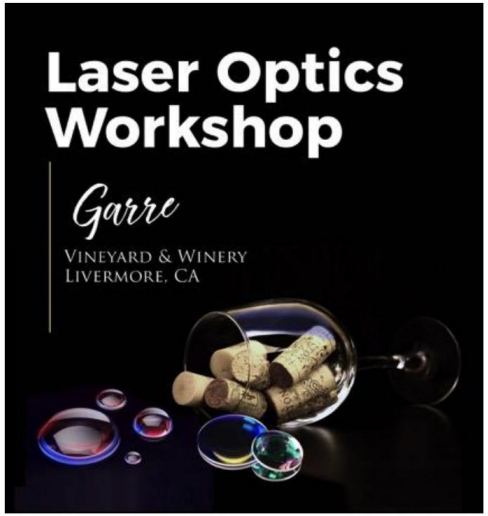
Our future’s so bright…I gotta wear shades

Photo in Painted Dessert – AZ Photonics Days 1/16/26

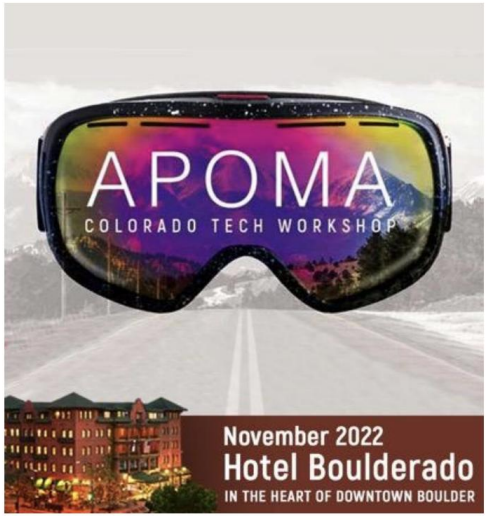
2026 TECH WORKSHOP

Timothy Kennedy | President-Elect

TECH WORKSHOPS



WORKSHOP TOUR Lawrence Livermore National Laboratory



WORKSHOP TOUR NIST

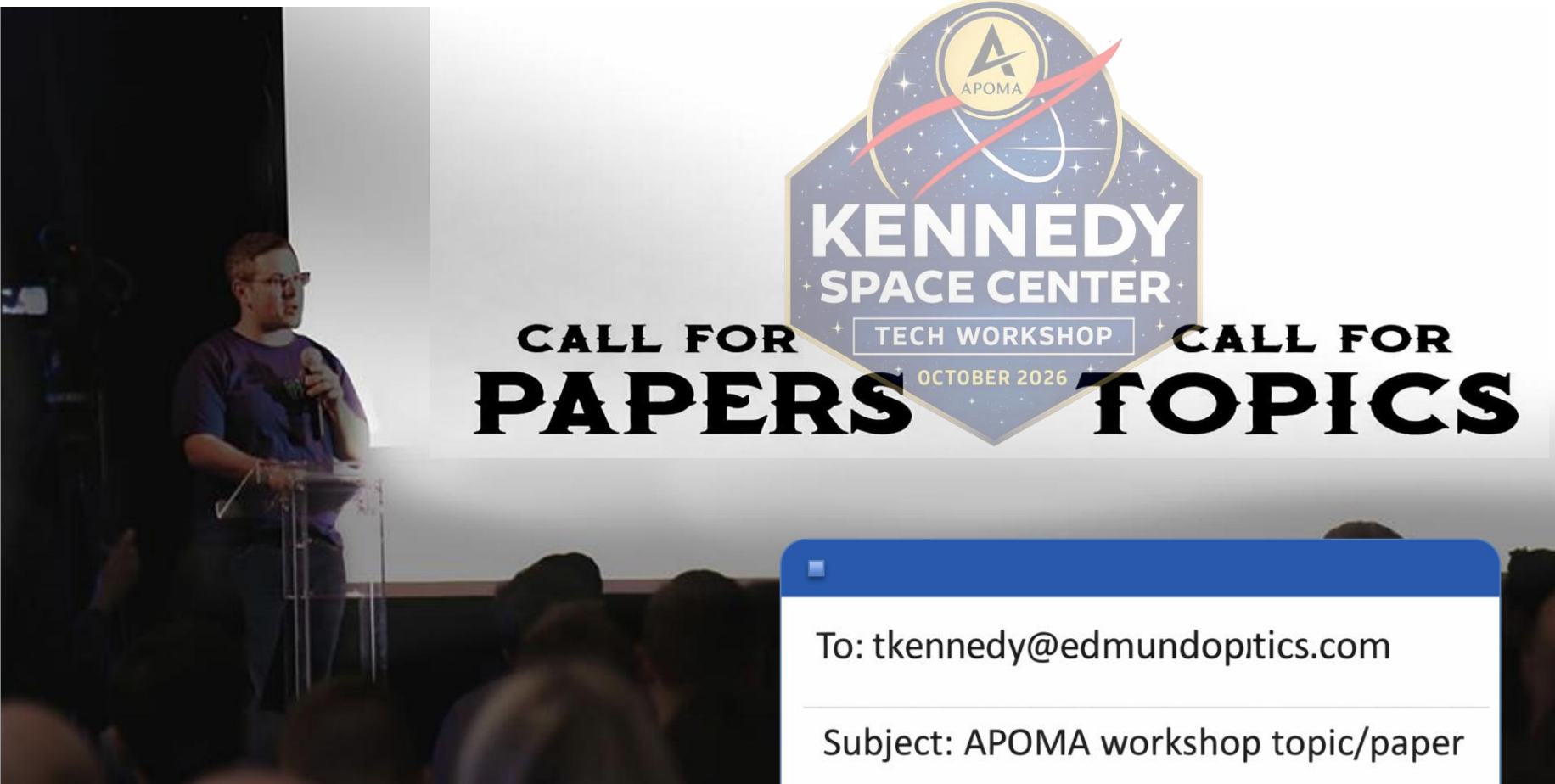
WORKSHOP TOUR LIGO

CONNECT | COLLABORATE | INNOVATE

TECH WORKSHOP | 2026

WORKSHOP TOUR

TECH WORKSHOP | ENGAGEMENT



CALL FOR SPONSORSHIP

To: tkennedy@edmundopitics.com

Subject: APOMA workshop topic/paper

GUEST SPEAKERS

APOMA Annual Meeting 2026

JPL Optics Briefing

Brian Monacelli
with input from the JPL Optics & Spectroscopy Section

Optical Engineer and
Technical Group Supervisor, Optical Implementation

2026 January 21

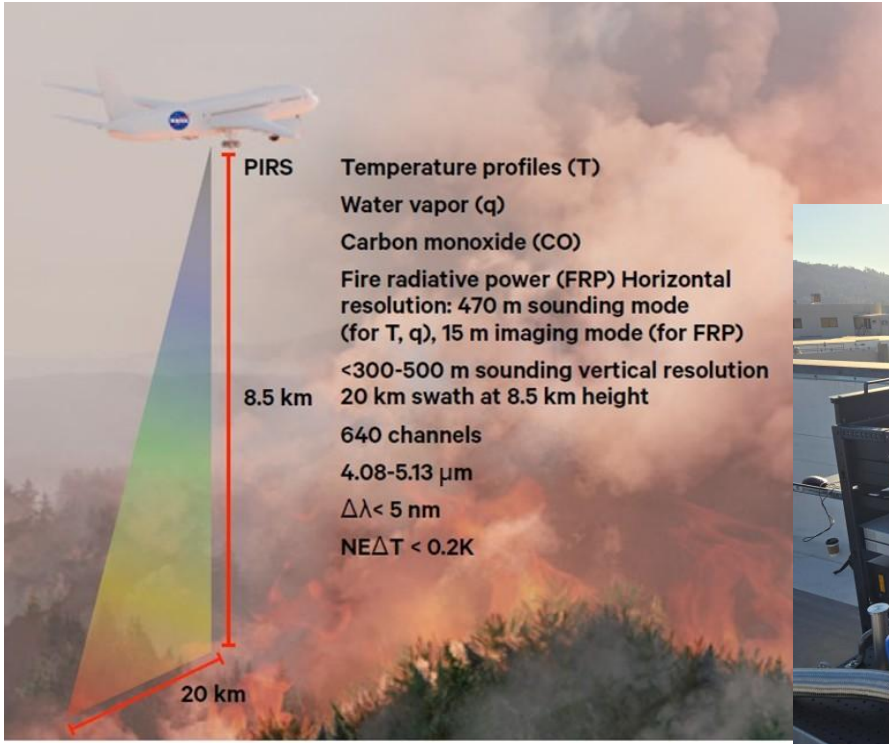
Jet Propulsion Laboratory
California Institute of Technology

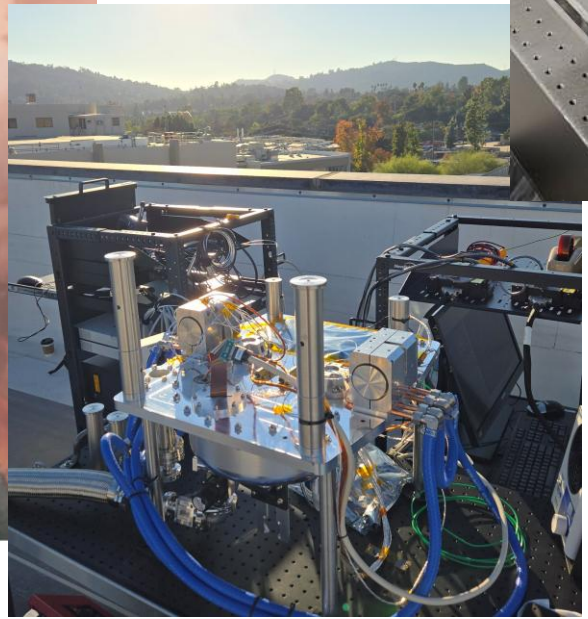
Recent and Proposed JPL Projects

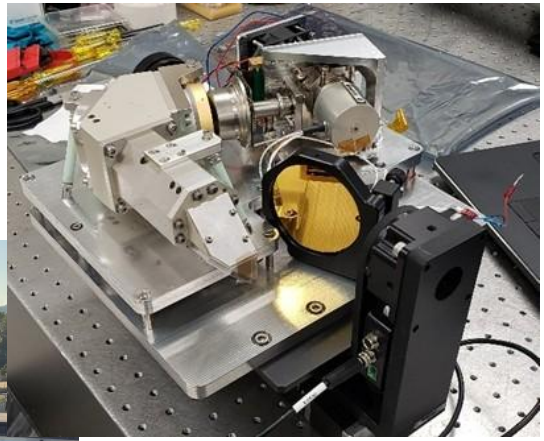
- *Wildfire propagation* monitoring via IR sounders and spectrometers
- *Mars exploration* via the Perseverance Rover
- *Asteroid monitoring* via the Near-Earth Object Surveyor
- *Exoplanet detection* via the Roman Space Telescope's Coronagraph Instrument

- Habitable Worlds Observatory
- Planetary and Asteroid Science

Pyro-atmosphere Infrared Sounder (PIRS)







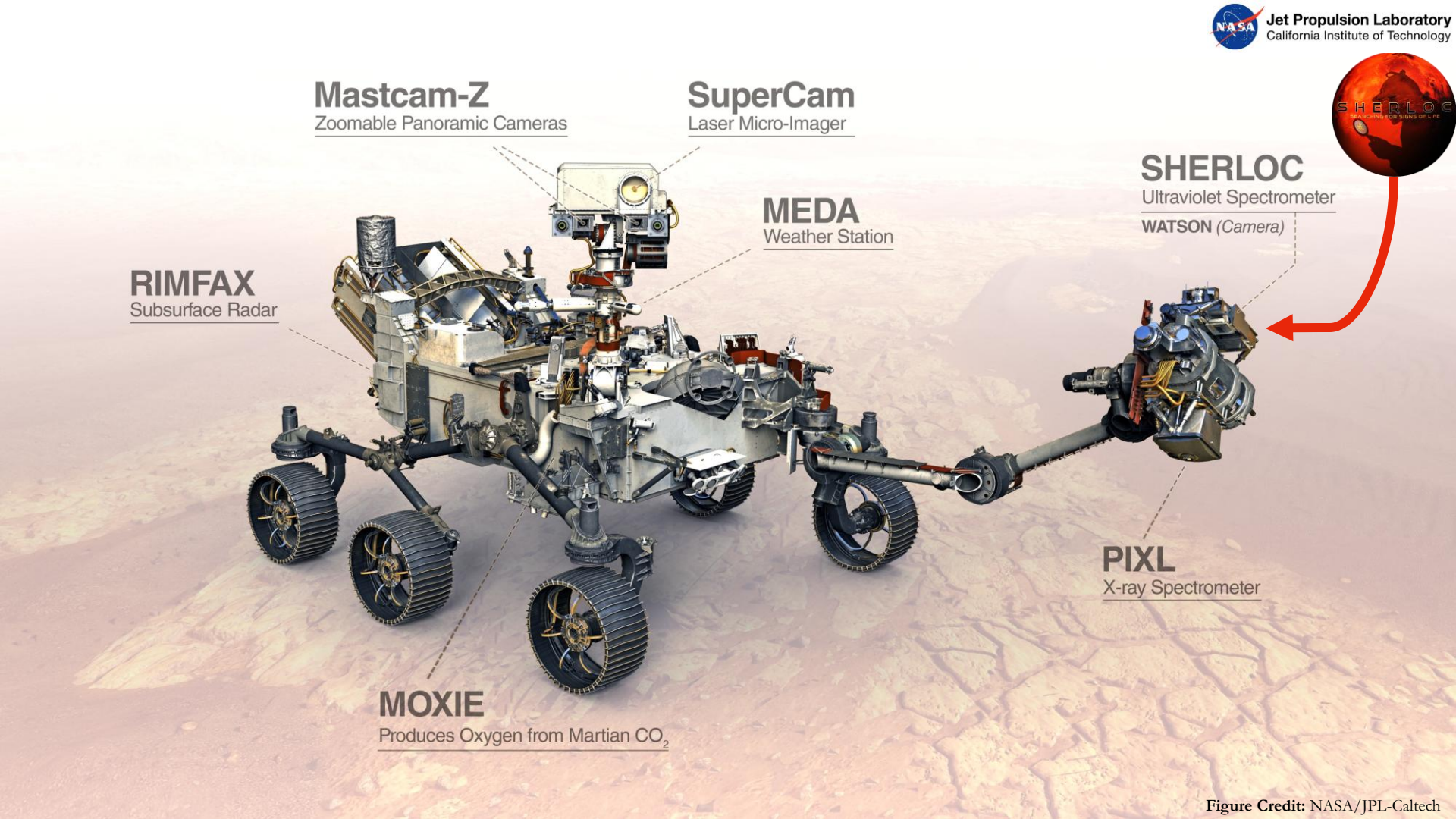


Figure Credit: NASA/JPL-Caltech


Jet Propulsion Laboratory
California Institute of Technology
Video Credit: NASA/JPL-Caltech

SHERLOC is one of Perserverance's Geologists

Jet Propulsion Laboratory
California Institute of Technology

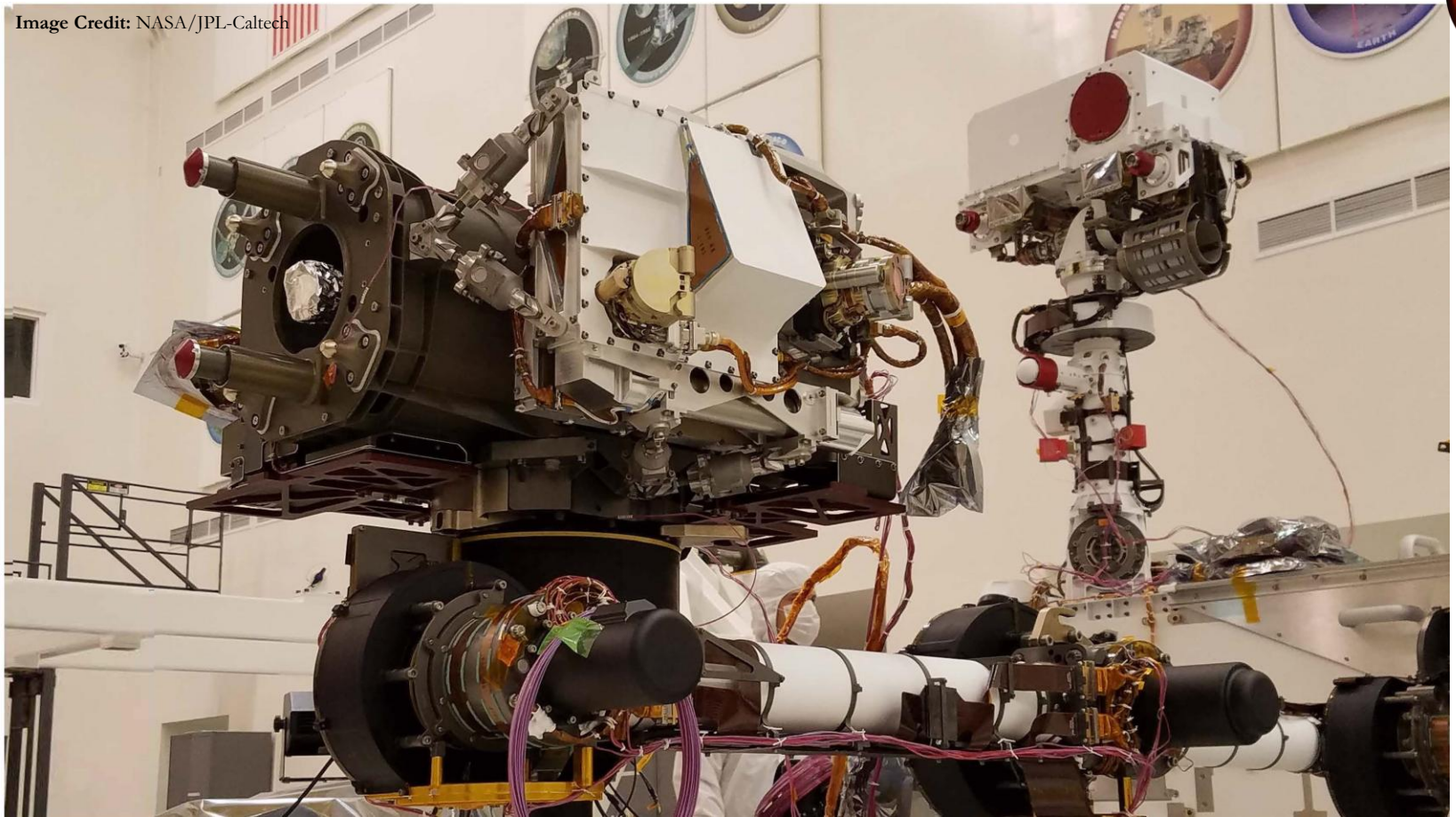
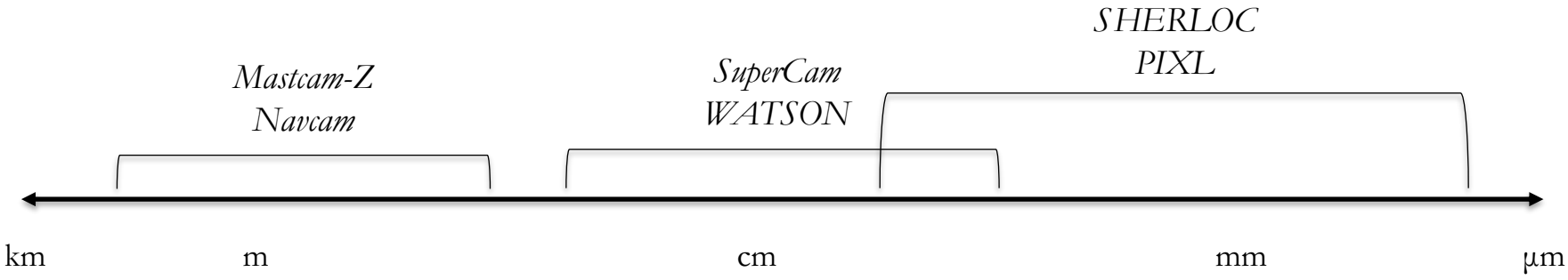
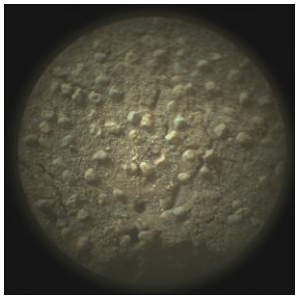
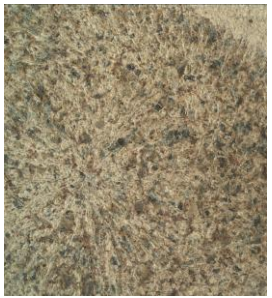


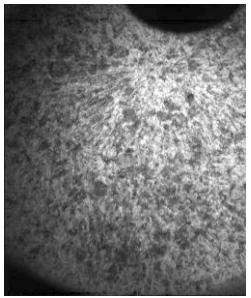
Image Credit: NASA/JPL-Caltech

Mars 2020 Perseverance Rover imaging systems









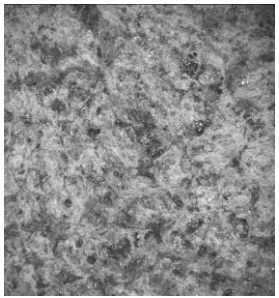
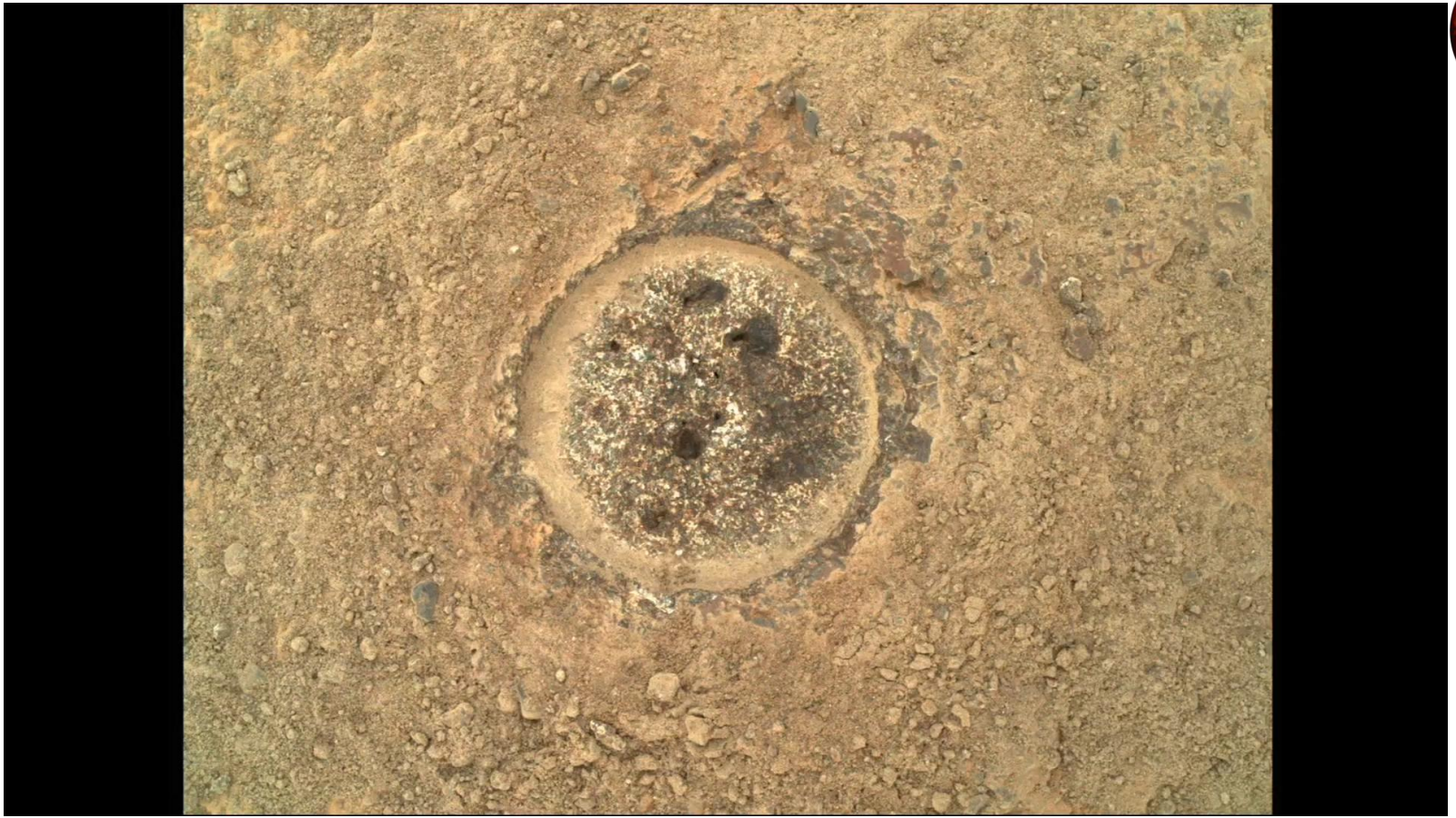


Image and Figure Credits: NASA/JPL-Caltech



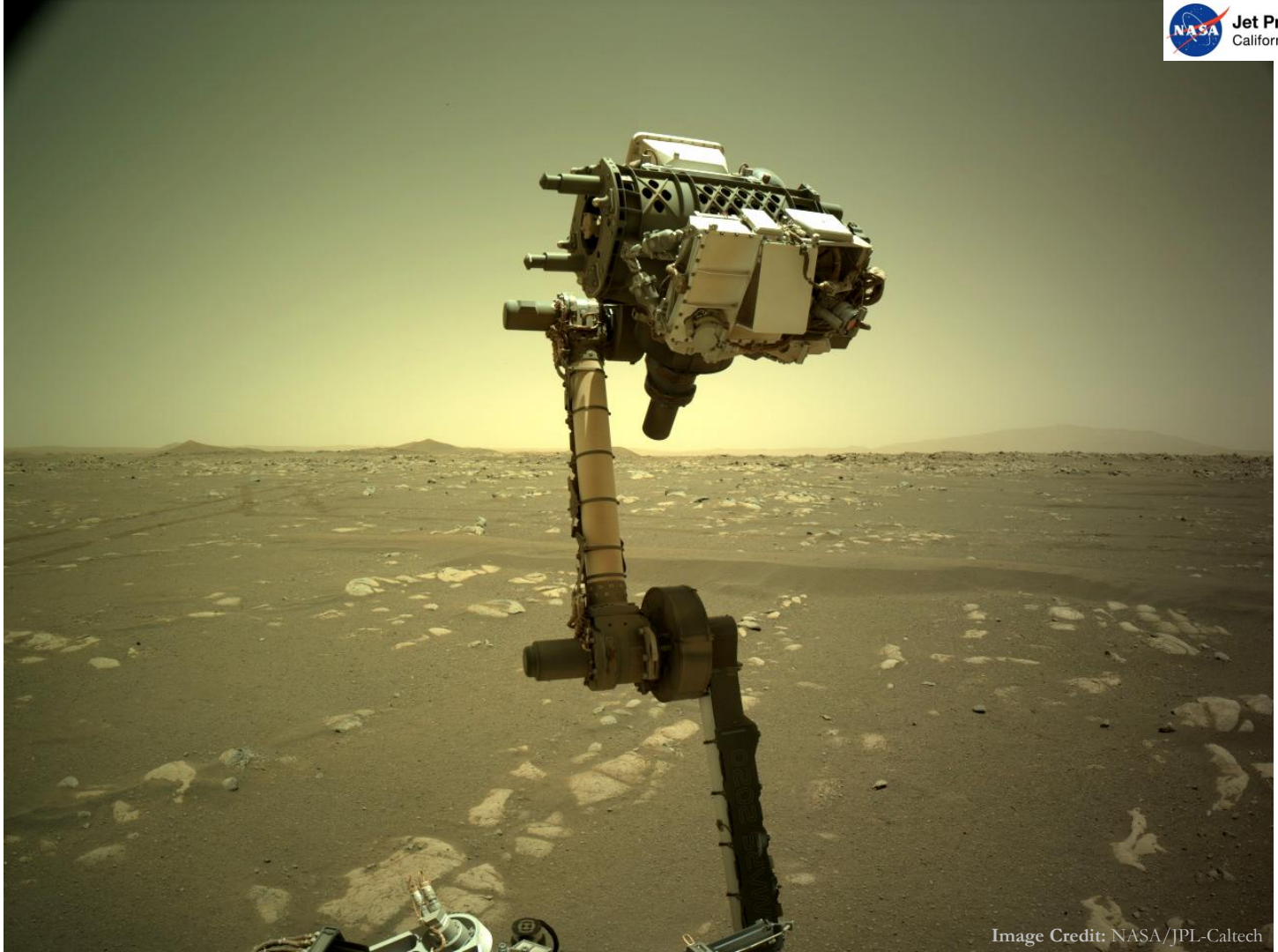
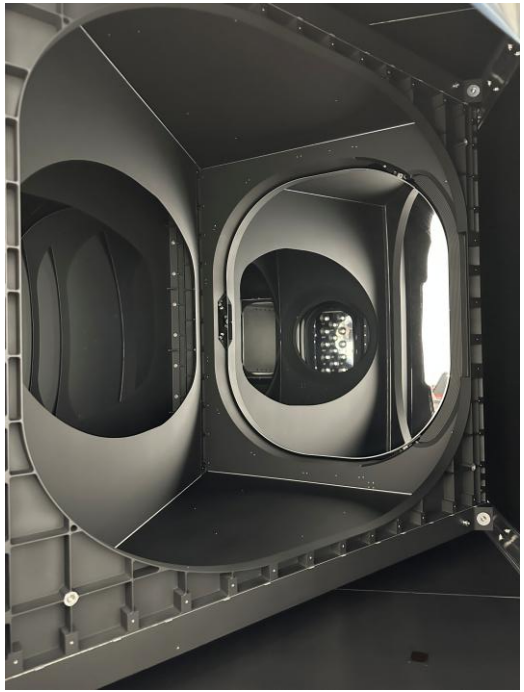


Image Credit: NASA/JPL-Caltech

Near-Earth Object Surveyor (NEOS) Imaging System



500 mm unobscured reflective triplet
all-aluminum freeform mirrors
dual MWIR and LWIR channels
1.7° x 7° FOV F/2.5

Assembled Flight Telescope with
Surrogate Camera Enclosure Assembly

Near-Earth Object Surveyor (NEOS) Test Equipment

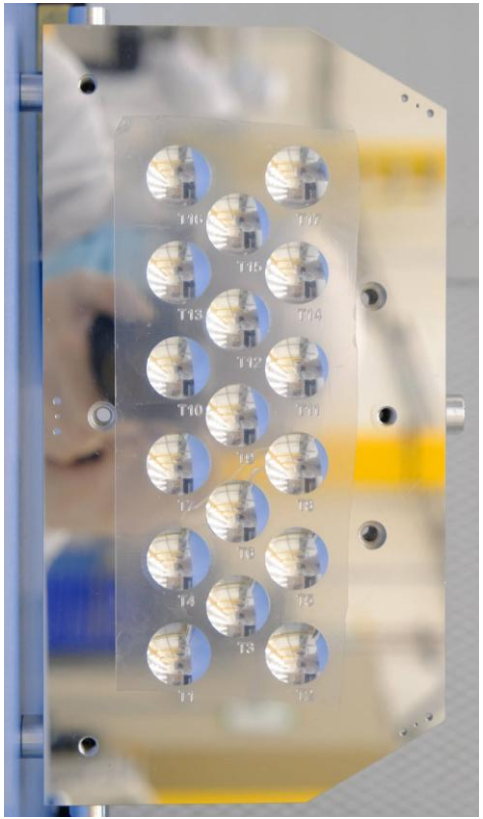


Image Credit: NASA/JPL-Caltech

NASA's Roman Space Telescope

Jet Propulsion Laboratory
California Institute of Technology

ROMAN CORONAGRAPH

Launching late 2026!

Coronagraph Instrument

Wide Field Instrument

Image Credit: NASA/GSFC

Coronagraph Instrument Flight Hardware

Image Credit: NASA/JPL-Caltech

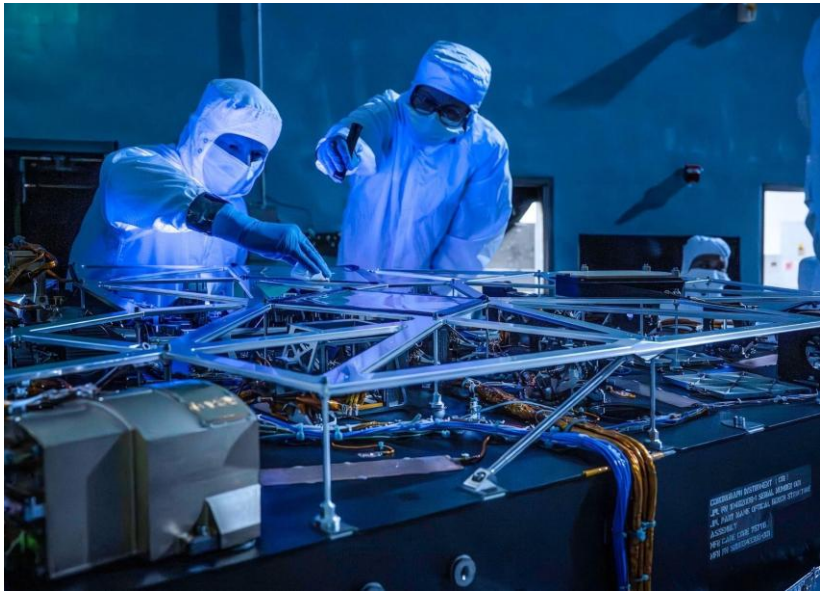


Image Credit: NASA/GSFC

Jet Propulsion Laboratory
California Institute of Technology

ROMAN CORONAGRAPH

Coronagraph Instrument Flight Hardware

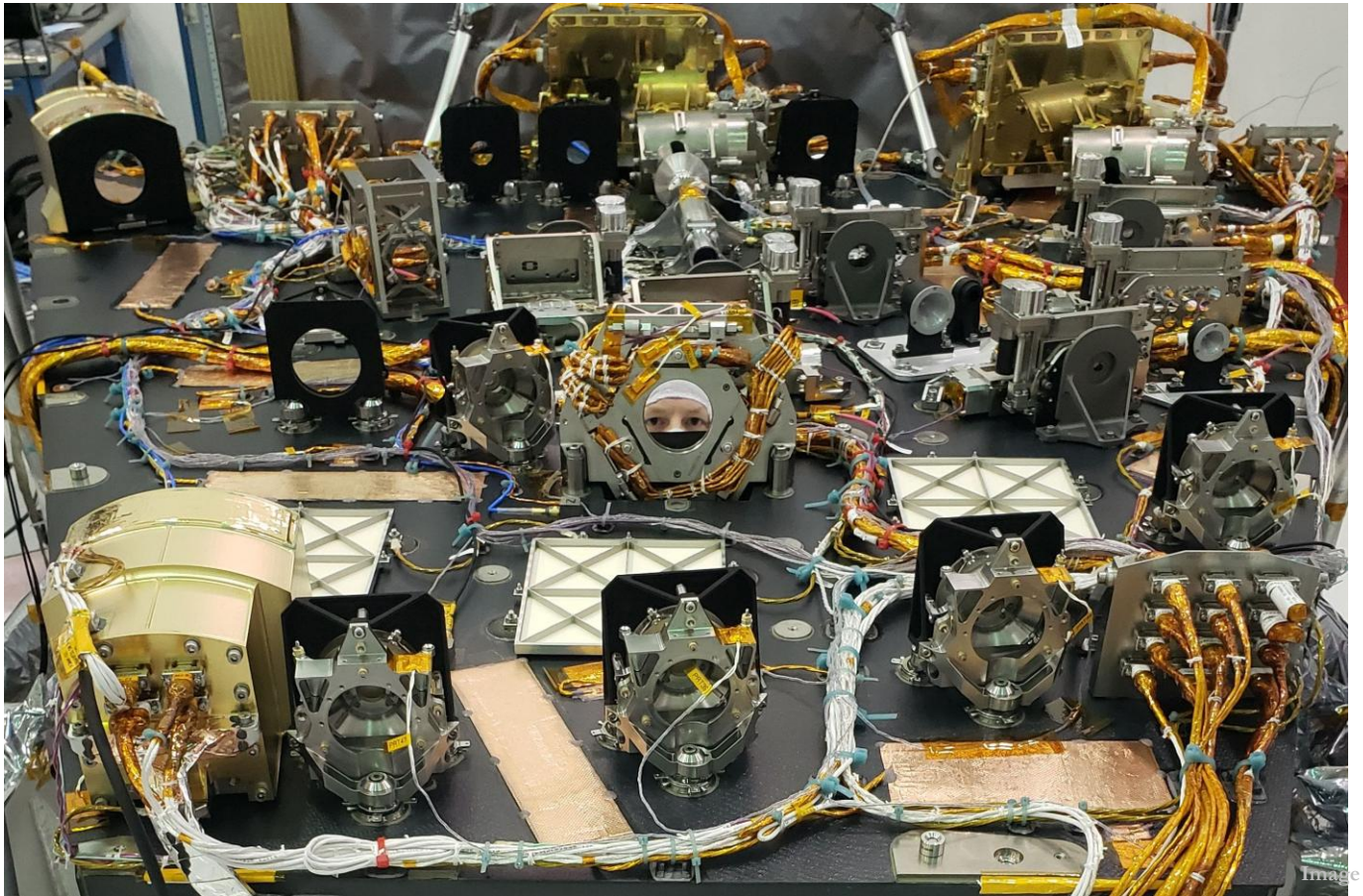
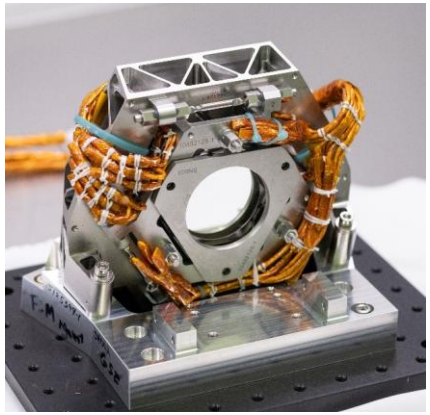


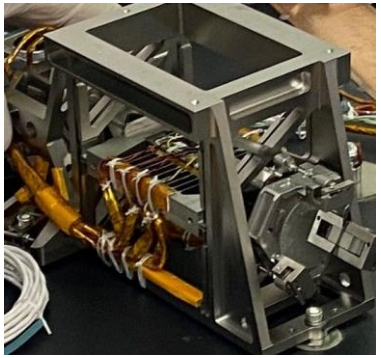
Image Credit: NASA/JPL-Caltech

Coronagraph Instrument Optical Mechanisms

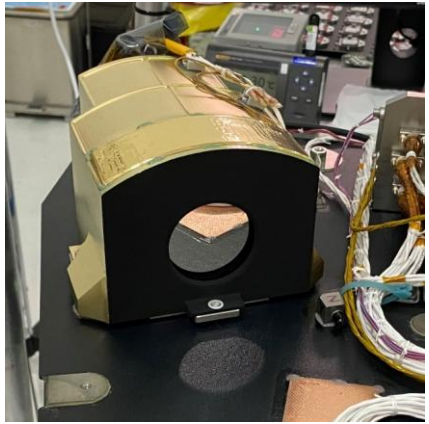
FSM
fast-steering mirror



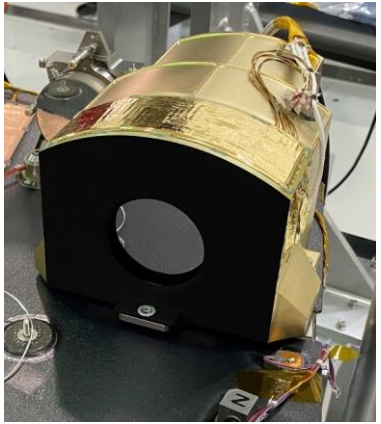
FCM
focus-control mirror



DM1
deformable mirror 1



DM2
deformable mirror 2



Coronagraph Instrument Color Filters

Image Credit: NASA/GSFC

Future Programs

- Habitable World Observatory (HWO) will require*
  - segmented off-axis with a near-parabola primary
  - instrument mirrors with SFE on the order of <1 nm RMS
  - extremely high-quality anti-reflection coatings
  - precision dichroics (for the Vis/NIR split), and
  - broadband high-reflectivity coatings
  - really uniform CTE ULE (or perhaps Zerodur)
  - picometer-level WFE changes due to optomechanical mounting deformation
- Venus Tunable Laser Spectrometer (VTLS) is a flight instrument JPL is scheduled to deliver to the NASA DAVINCI Venus mission in late 2031
  - VTLS will make in situ measurements of certain constituents of the planetary atmosphere using laser spectroscopy

* Matthew R. Bolcar, Feng Zhao, Paul Scowen, Lee D. Feinberg, J. Scott Smith, Josh Abel, "The Habitable Worlds Observatory technology development plan," Proc. SPIE PC13623, UV/Optical/IR Space Telescopes and Instruments: Innovative Technologies and Concepts XII, PC1362302 (18 September 2025); https://doi.org/10.1117/12.3065725

Jet Propulsion Laboratory
California Institute of Technology

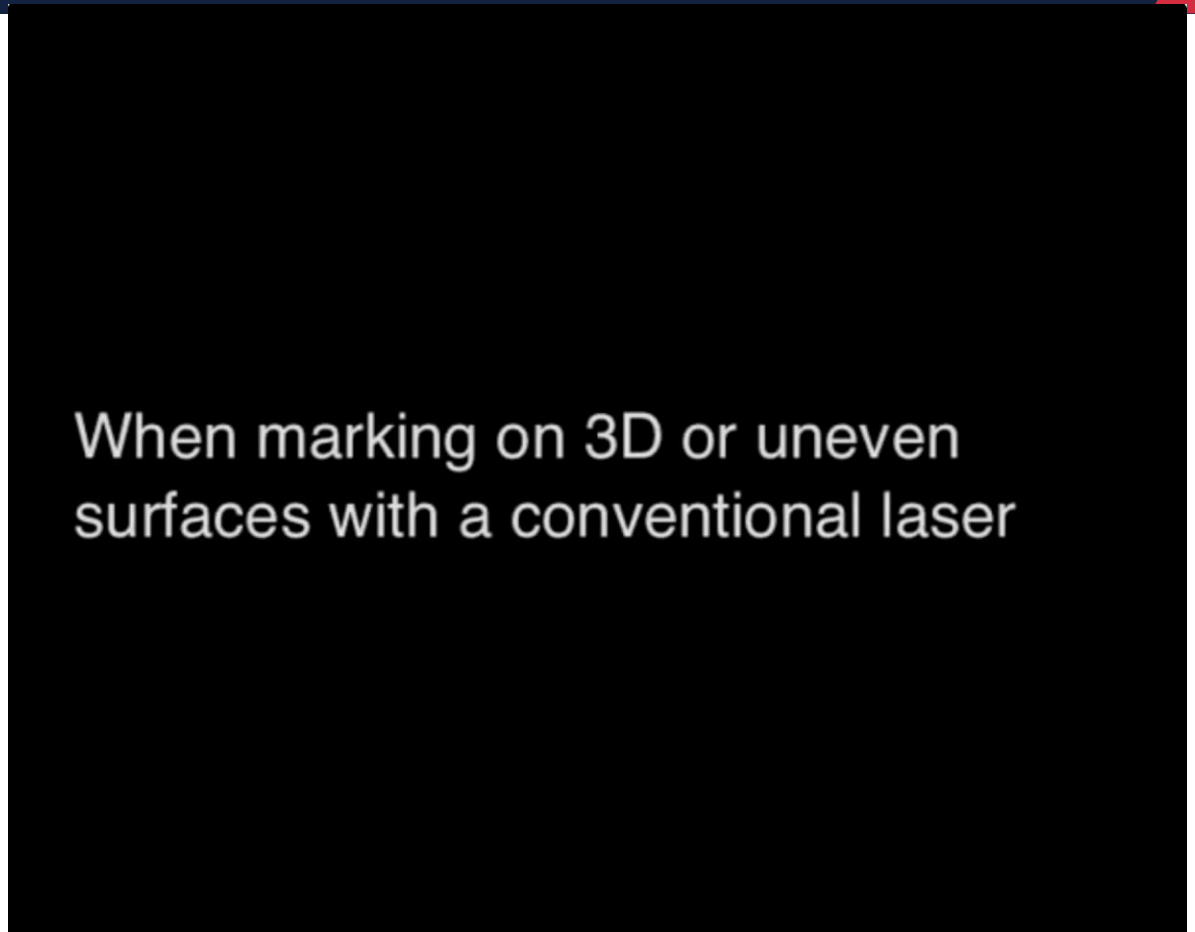
jpl.nasa.gov

Metalenses for 3D beam shaping

Rajesh Menon
rajesh@oblateoptics.com
Oblate Optics, Inc.

All high-value parts require laser marking for security

Challenging on non-flat parts

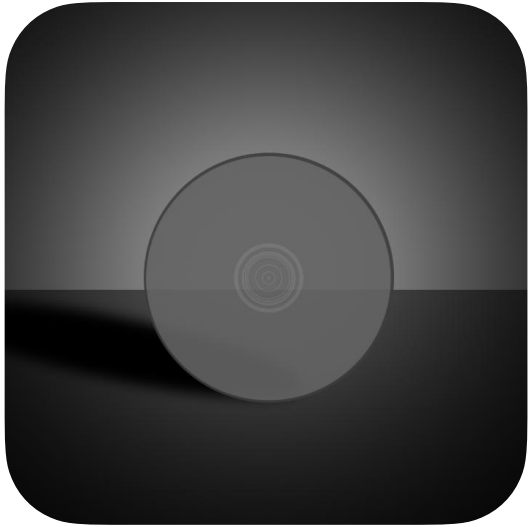


The solution = Extended depth-of-focus metalens

No mechanical refocusing!

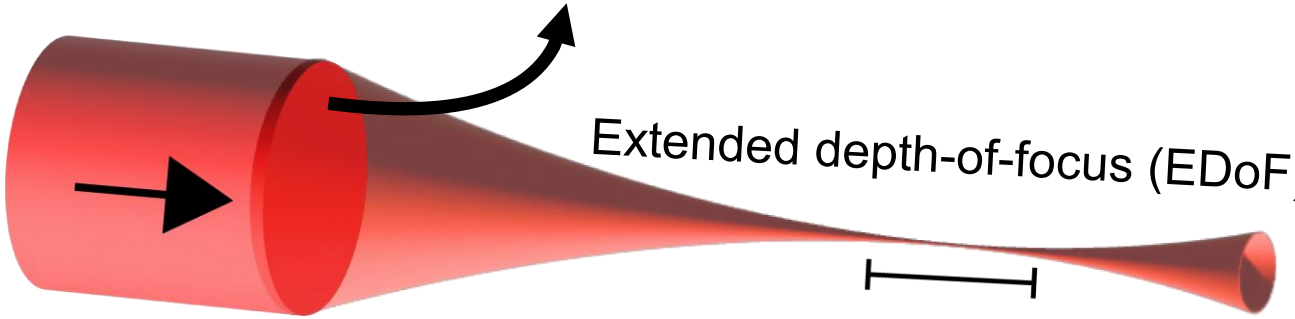
The solution = DeepFocus™

For all lasers

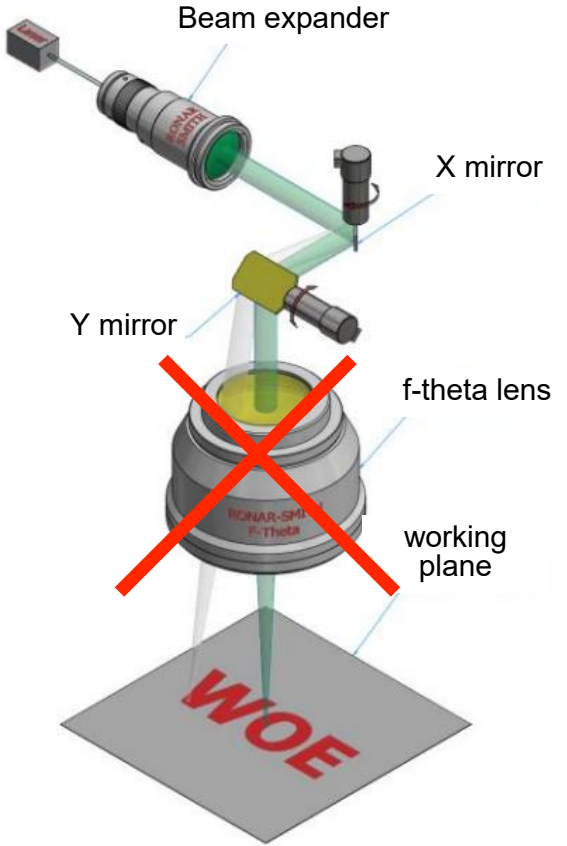


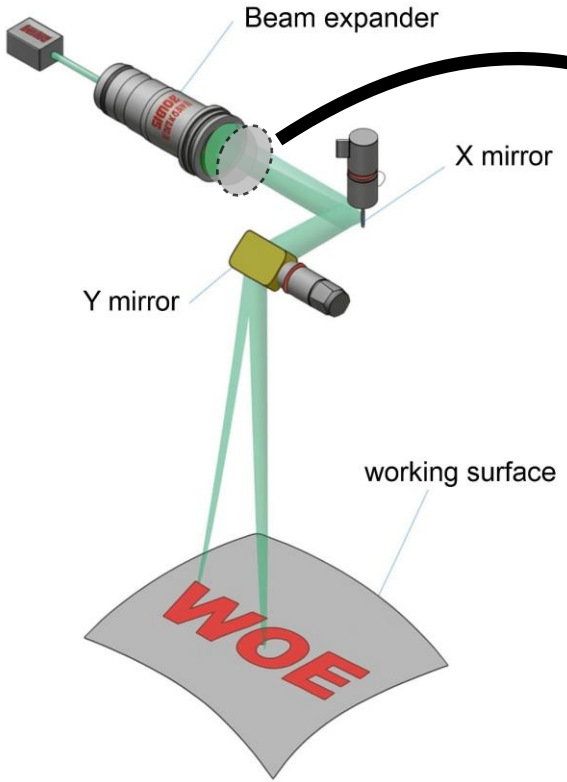
Spot-size constant upto 10 x DoF

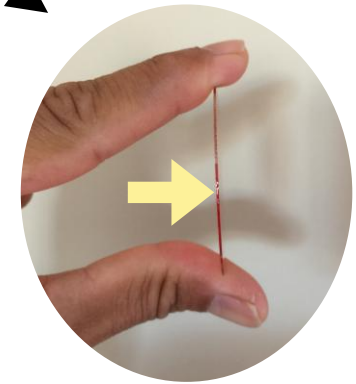
Gaussian beam



What about laser scanning systems?

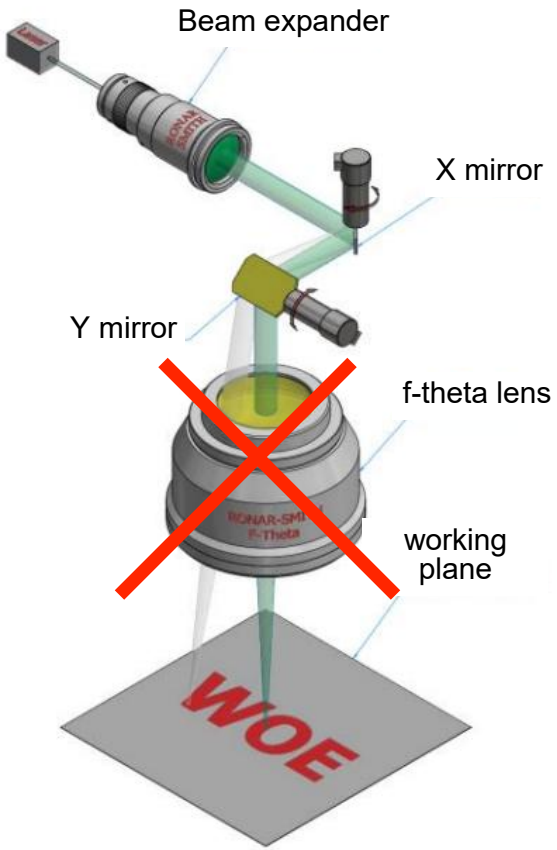


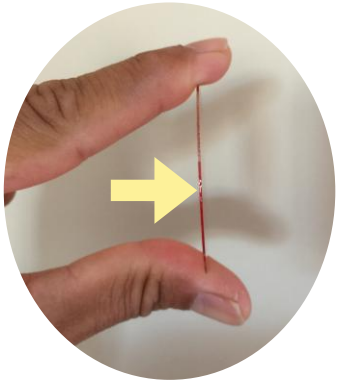




EDoF metalens

What we replace?

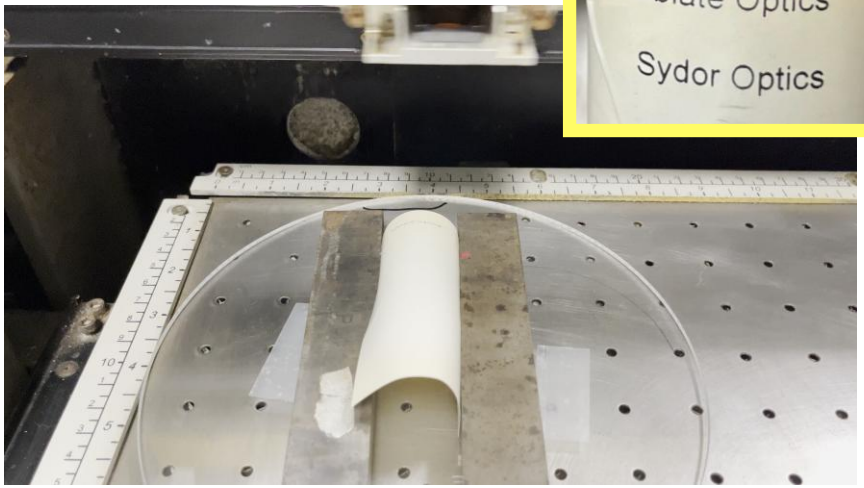




EDoF metalens

Laser marking on non-flat parts.

Retrofit galvo scanhead with Thorlabs



Retrofit flying head with Sydor

OBLATE OPTICS

Rajesh Menon
rajesh@oblateoptics.com
rajesh@oblateoptics.com

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OEOSC

The Optics and Electro-Optics Standards Council

Jennifer L. Michels

Redhead Optical, Inc. / OEOSC

ISO Standards Update (2025)

Drawings

Published

ISO 10110-6 (Centering)

ISO 10110-11 (Default tolerances)

ISO 10110-5 (Surface form)*

In Revision

ISO 10110-9 (Surface treatment and coating)

Materials and Coatings

Published

ISO 6760-1 (dN/dT Testing)

ISO 19741 (Striae in IR materials)

ISO 9689 (Attack by aqueous alkaline phosphates)

ISO 21575 (Powder test)*

In Revision

ISO 9211-2 (Coating optical properties)

ISO 9211-5 (AR Coatings)

ISO 9211-6 (Reflective coatings)

ISO 12123 (Raw optical glass)

ISO 10629 (Attack by aqueous alkaline solutions)

Testing

Published

ISO 9335 (Principles of OTF measurement)

ISO 11421 (Uncertainty of OTF measurement)

ISO 14999-4 (Interferometric eval. of surface form and WFE)*

Revision in process

ISO 9022-7 (Drip and rain)

ISO 9358 (Veiling glare → Stray Light)

ISO 15368-2 (Internal transmittance)

ISO 21395-1 (Refractive index)

Lasers and EO Systems

Published

ISO 11533-2 (Safety requirements for handheld lasers)*

ISO 15367-1 (Determination of the shape of a laser beam wavefront)*

ISO 21254-1 (Laser-induced damage definitions and principles)

ISO 11554 (Tests for laser beam power, energy, and temporal characteristics)

Revision in process

ISO 13682-1 and ISO 13682-2 (Properties of ultrashort laser pulses)

ISO 14880-1 (Microlens array vocabulary)

ISO 11551 (Test method for absorption of laser components)

ISO 22248 (Medical beam delivery systems)

ISO 11810 (Laser resistance of surgical drapes)

ISO 15367-2 (Shack Hartmann sensors for laser beam wavefront)

ISO 13697 (Tests for reflectance and transmittance of laser components)

ISO 11670 (Laser beam spatial stability)

ISO 11990 (Laser resistance of tracheal tubes)

ISO 13694 (Test methods for laser beam irradiance distribution)

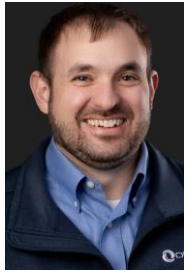
ISO 11145 (Lasers – Vocabulary and symbols)

* Expected in early

OEOSC Increases Education Efforts

- **Website updates (oeosc.org/Training)**
  - Lists of standards by category
  - Publications about standards by OEOSC members
  - Additional resources
  - FAQ videos are upcoming
- **Courses**
  - SC01-SC06
  - Course SC07: Standards in Optical Testing
  - Courses SC08+: Optical Materials, MTF, Stray Light, Laser Damage
  - Thanks to AmeriCOM for funding for course development!
- **Colleges**
  - Faculty goal is curriculum
  - Student connection
- **Other**
  - Focus Groups
  - Table at conferences
  - How to reach primes
  - Advertising in general

OEOSC Leadership



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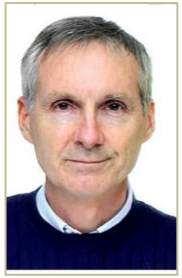

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Interested in joining us?

See OEOSC.org for benefits of membership.

UPCOMING EVENTS

April 26-30, 2026

SPIE. DEFENSE+ SECURITY

Gaylord National Resort and Convention Center

National Harbor, MD

July 16, 2026

WNY OPTICS GOLF TOURNAMENT

Victor Hills Golf Course

Rochester, NY

August 23-27, 2026

SPIE. OPTICS+ PHOTONICS

San Diego Convention Center

San Diego, CA

Thank you and enjoy Photonics West

APOMA

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