

# LABORATORY for LASER ENERGETICS

University of Rochester • Laboratory for Laser Energetics





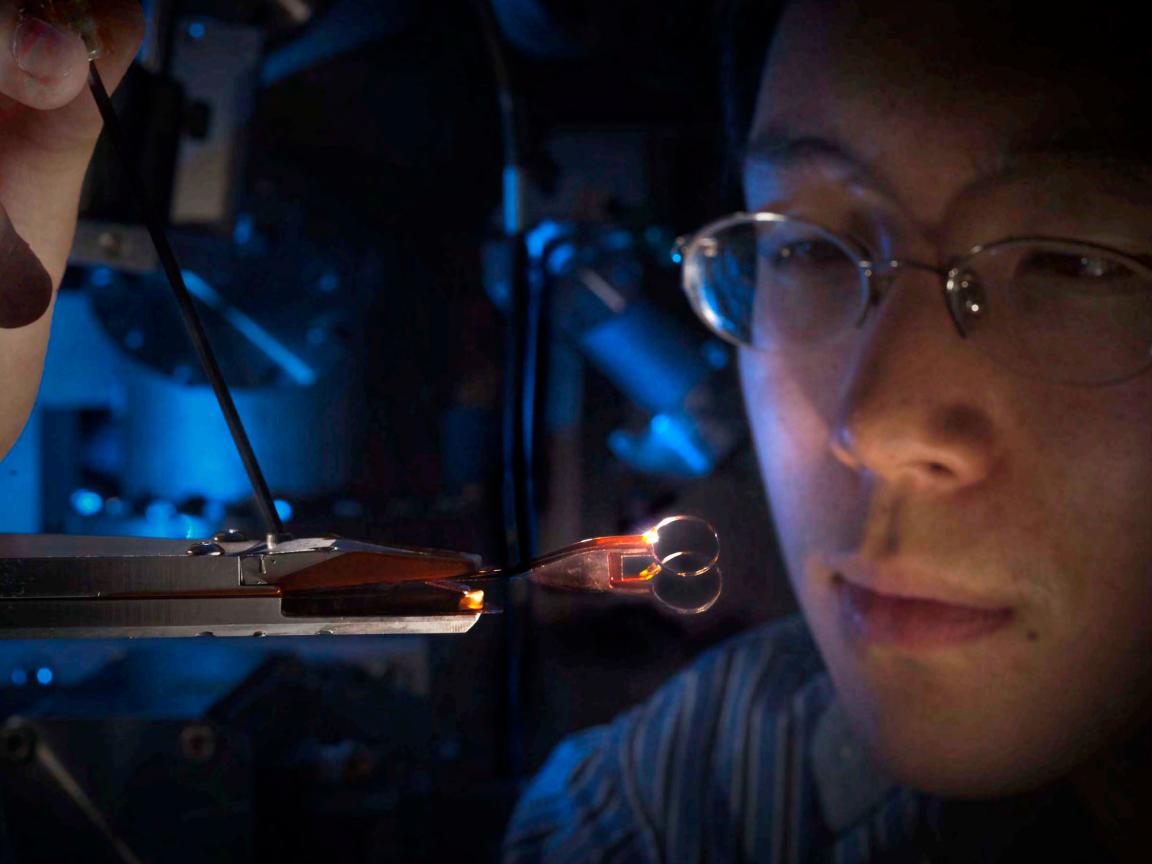
#### 4ω Probe Wells

The 10-ft-diam OMEGA EP target chamber continues to be populated with various diagnostics and fixed portals. Jeff Rodas is shown at TIM 12 during the installation of the two  $4\omega$  probe wells, one of which is seen as a specular source in the center.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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•	University Holiday					
8	9	10	11	12	13	14
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29	30	31	DECEMBER 2011       S     M     T     W     T     F     S       1     2     3       4     5     6     7     8     9     10       11     12     13     14     15     16     17       18     19     20     21     22     23     24       25     26     27     28     29     30     31			FEBRUARY  S M T W T F S  1 2 3 4  5 6 7 8 9 10 11  12 13 14 15 16 17 18  19 20 21 22 23 24 25  26 27 28 29









Felix Jin observes at close range coils of the MIFEDS (magneto-inertial fusion electrical discharge system) diagnostic. MIFEDS can generate magnetic fields up to 150 kG depending on the coil geometry. Used in conjunction with imploding capsules, MIFEDS has produced peak magnetic fields of ~40 MG.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20 Presidents' Day	21	22	23	24	25
26	27	28	29			MARCH  S M T W T F S  1 2 3  4 5 6 7 8 9 10  11 12 13 14 15 16 17  18 19 20 21 22 23 24  25 26 27 28 29 30 31















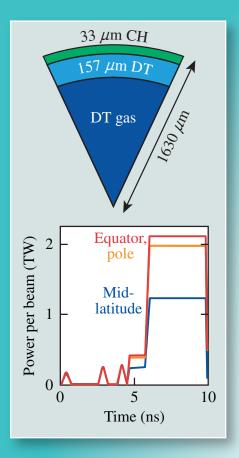


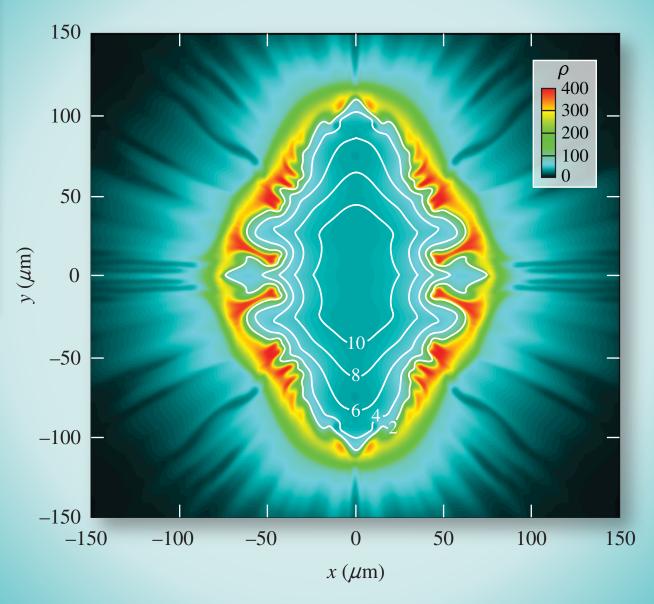
The Third Omega Laser Facility Users Group Workshop, held 27–29 April 2011, attracted over 115 researchers from 15 universities, 14 centers and laboratories, and 13 countries. The purpose of the workshop was to facilitate a continuing dialogue among the individual users and between the users and LLE.

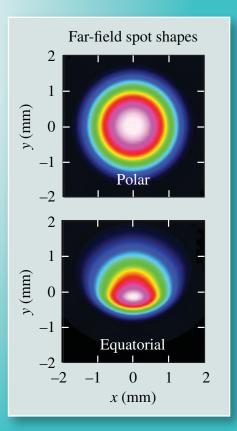
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11  Daylight Savings Time Begins	12	13	14	15	16	17
18	19	20	21	22	23	24
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Density contour map of a gain = 32, 1.5-MJ, triple-picket, polar-drive design at ignition. A simple direct-drive capsule is imploded using specialized laser pulses and spot shapes.

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29	30		MARCH         S       M       T       W       T       F       S         1       2       3         4       5       6       7       8       9       10         11       12       13       14       15       16       17         18       19       20       21       22       23       24         25       26       27       28       29       30       31			MAY  S M T W T F S  1 2 3 4 5  6 7 8 9 10 11 12  13 14 15 16 17 18 19  20 21 22 23 24 25 26  27 28 29 30 31







SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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27	Memorial Day University Holiday	29	30	31	APRIL         S       M       T       W       T       F       S         1       2       3       4       5       6       7         8       9       10       11       12       13       14         15       16       17       18       19       20       21         22       23       24       25       26       27       28         29       30	JUNE  S M T W T F S  1 2  3 4 5 6 7 8 9  10 11 12 13 14 15 16  17 18 19 20 21 22 23  24 25 26 27 28 29 30







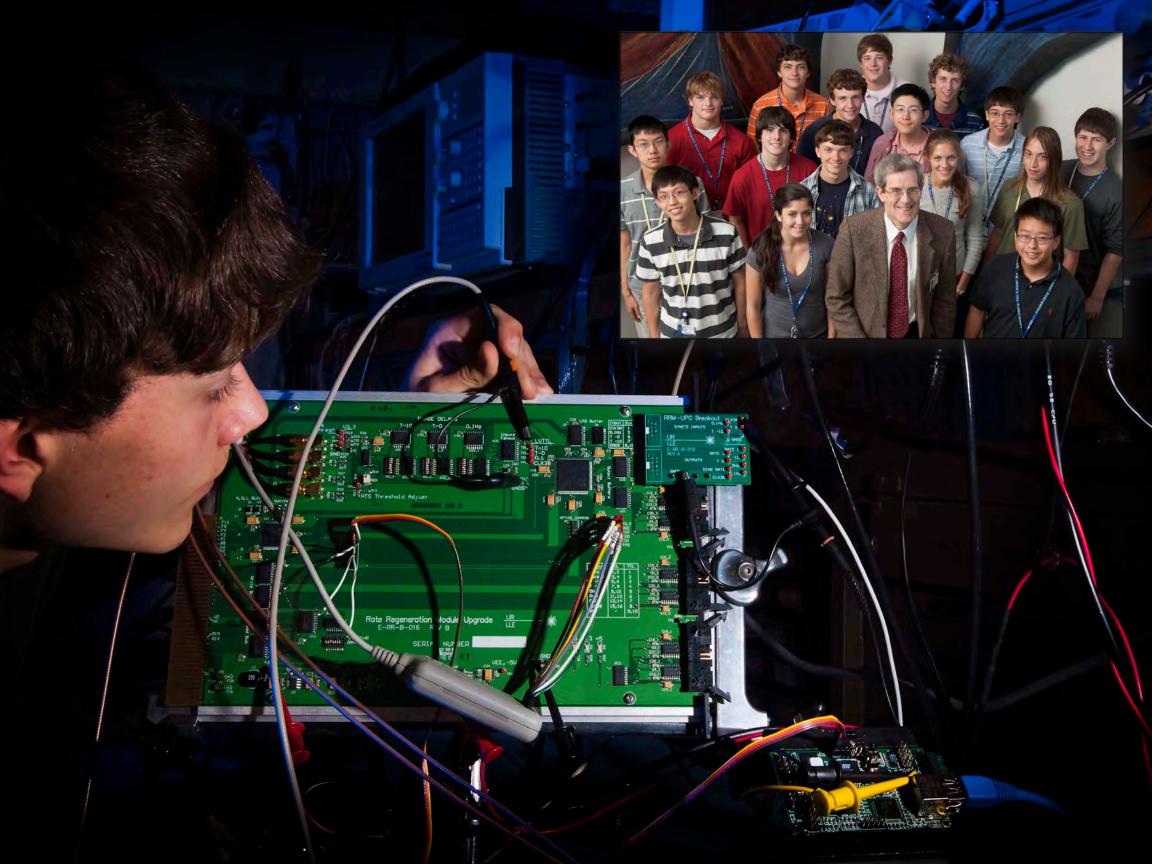
#### X-ray Thomson Scattering

Dr. Sean Regan inspects a target assembly for x-ray Thomson-scattering experiments, which are used to validate our nonlocal hydrodynamic model in the coronal plasma. Theses simulations agree well with electron and ion-temperature measurements near the initial target surface.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
MAY  S M T W T F S  1 2 3 4 5  6 7 8 9 10 11 12  13 14 15 16 17 18 19  20 21 22 23 24 25 26  27 28 29 30 31		JULY       S     M     T     W     T     F     S       1     2     3     4     5     6     7       8     9     10     11     12     13     14       15     16     17     18     19     20     21       22     23     24     25     26     27     28       29     30     31			1	2
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10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	LLE GOLF TOURNAMENT AT BLUE HERON HILLS	30







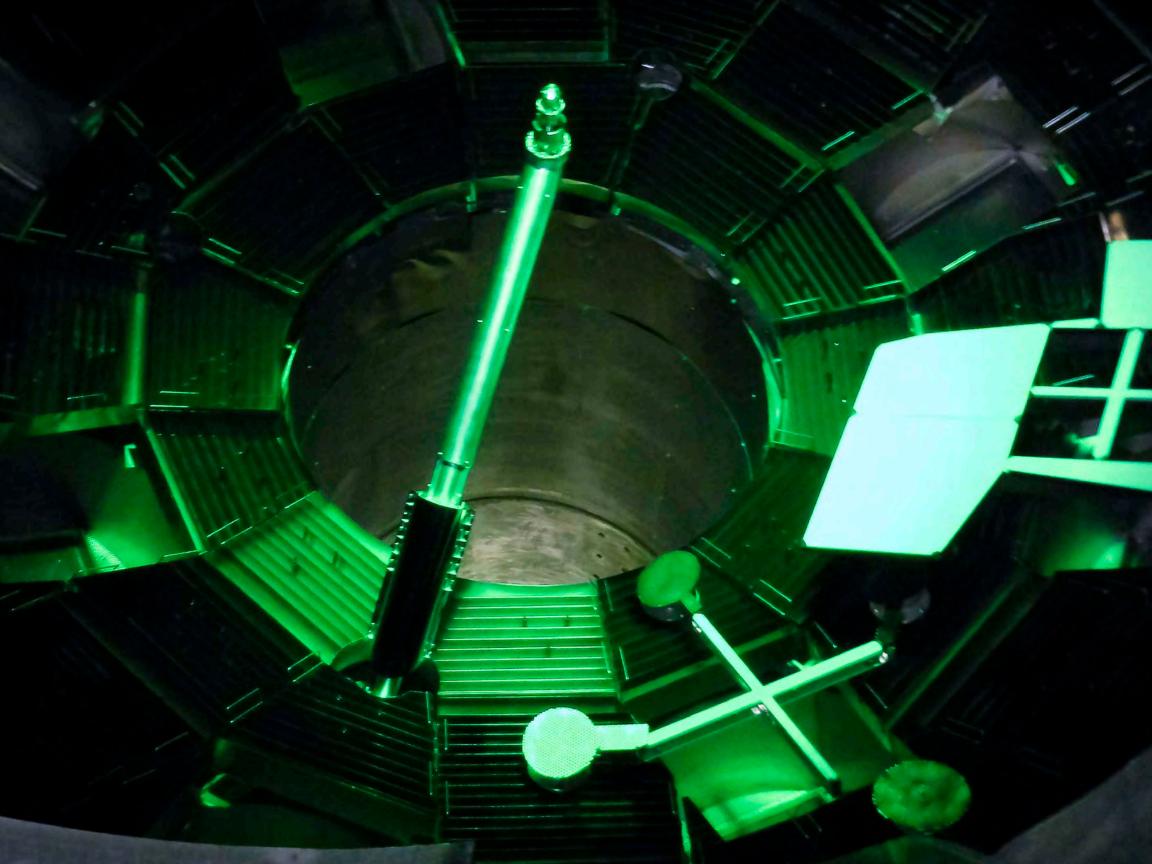
## High School Program

Participants in LLE's 22nd Summer High School Research Program with program director Dr. Stephen Craxton. The program challenges high school students to explore research topics and careers under the tutelage of LLE scientists, engineers, and staff in a state-of-the-art environment.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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29	30	31	JUNE       S     M     T     W     T     F     S       1     2       3     4     5     6     7     8     9       10     11     12     13     14     15     16       17     18     19     20     21     22     23       24     25     26     27     28     29     30			AUGUST  S M T W T F S  1 2 3 4  5 6 7 8 9 10 11  12 13 14 15 16 17 18  19 20 21 22 23 24 25  26 27 28 29 30 31







#### Bang Time Detector

The LLE-built south-pole bang-time detector, installed inside the NIF target chamber, is used to determine the bang time along the hohlraum axis. It is one of the National Ignition Facility's diagnostics used for the National Ignition Campaign.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	SEPTEMBER           S         M         T         W         T         F         S           1         2         3         4         5         6         7         8           9         10         11         12         13         14         15           16         17         18         19         20         21         22           23         24         25         26         27         28         29           30







#### Fill Transfer Station Upgrade

Access to the chamber in which targets are filled with hydrogen isotopes is infrequent and requires complex efforts to carry out. Mark Romanofsky fine tunes the installation of the shroud cooler and guide rail plates under the dome.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
AUGUST  S M T W T F S  1 2 3 4  5 6 7 8 9 10 11  12 13 14 15 16 17 18  19 20 21 22 23 24 25  26 27 28 29 30 31			OCTOBER       S     M     T     W     T     F     S       1     2     3     4     5     6       7     8     9     10     11     12     13       14     15     16     17     18     19     20       21     22     23     24     25     26     27       28     29     30     31			1
2	3	4	5	6	7	8
	Labor Day University Holiday				LLE Golf Tournament at Bristol Harbour	0
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30						0
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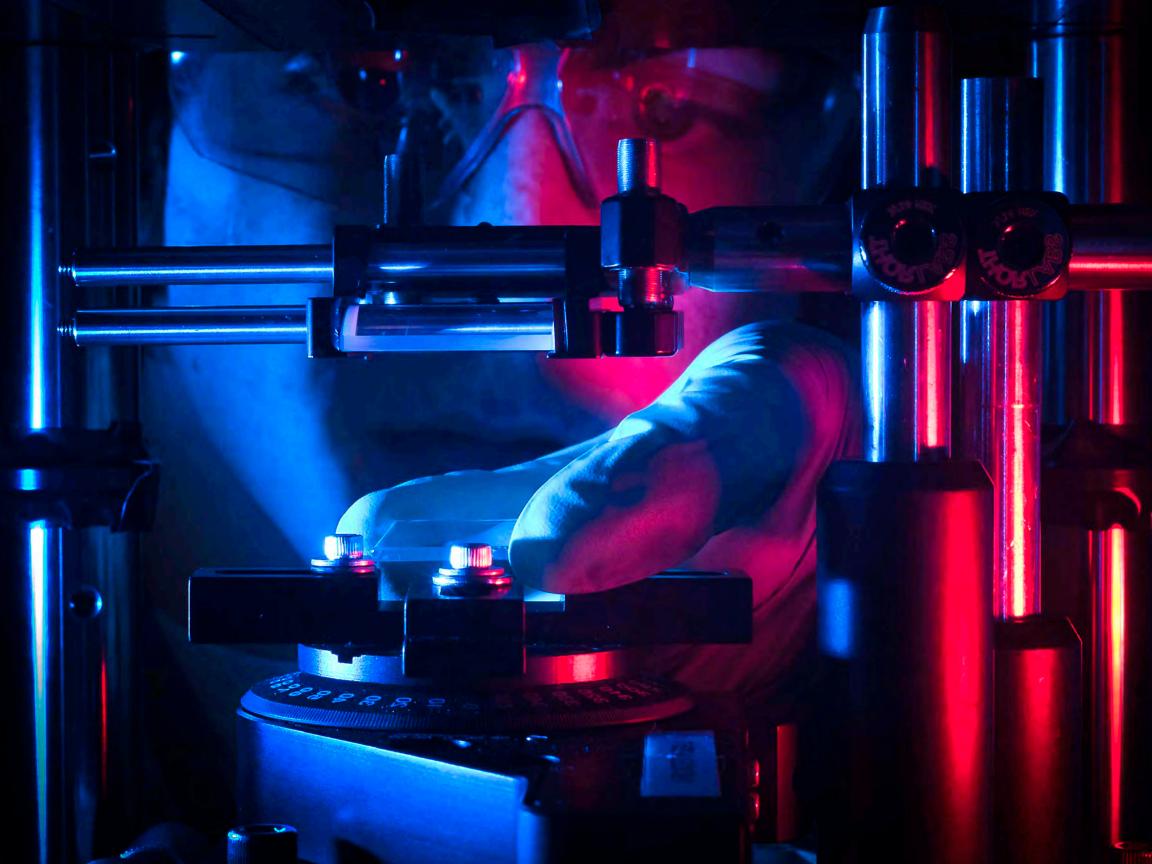
#### 20,000th Shot

Since the 60-beam OMEGA laser was commissioned in 1995, it has conducted 20,000 target shots. The facility capabilities include flexible pulse shaping, beam smoothing, power balance, and comprehensive diagnostics. OMEGA is one of the world's most productive high-energy-density-physics facilities.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
SEPTEMBER       S     M     T     W     T     F     S       1     2     3     4     5     6     7     8       9     10     11     12     13     14     15       16     17     18     19     20     21     22       23     24     25     26     27     28     29       30	1	2	3	4	5	6
7	8  COLUMBUS DAY	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28		30 NUAL MEETING OF THE APS ASMA PHYSICS IN PROVIDEN			Pachestar & Laboratory	NOVEMBER  S M T W T F S  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30







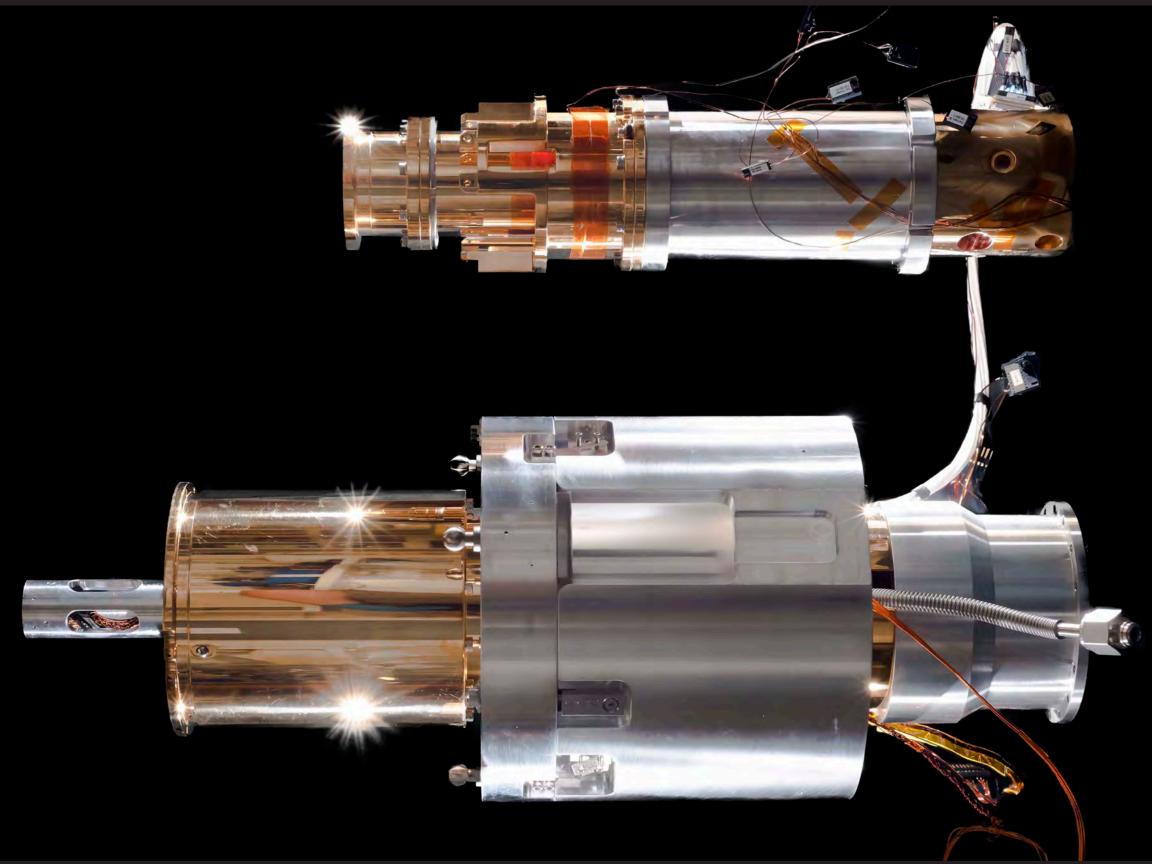
## Polarized Optical Beams

Michael Statt adjusts an apparatus for generating radial photo induced alignment in liquid crystal devices intended for polarization-control applications.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
OCTOBER           S         M         T         W         T         F         S           1         2         3         4         5         6           7         8         9         10         11         12         13           14         15         16         17         18         19         20           21         22         23         24         25         26         27           28         29         30         31			DECEMBER       S     M     T     W     T     F     S       1     2     3     4     5     6     7     8       9     10     11     12     13     14     15       16     17     18     19     20     21     22       23     24     25     26     27     28     29       30     31	1 54th Annual Meetin of Plasma Physics	g of the APS Division in Providence, RI	3
DAYLIGHT SAVINGS TIME ENDS	5	6	7	8	9	10
11	12	13	14	15	16	17
	Veterans Day	•				
18	19	20	21	22	23	24
		•		Thanksgiving Day University Holiday	University Holiday	
25	26	27	28	29	30	
			0			







#### Cryogenic Shrouds

Continued improvements in the delivery of cryogenic targets to the center of the OMEGA target chamber have led to the upgraded upper and lower thermal shrouds shown here. Housed in the moving cryostat transport cart, the lower shroud protects, cools, and positions the mounted target.

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
NOVEMBER  S M T W T F S  1 2 3  4 5 6 7 8 9 10  11 12 13 14 15 16 17  18 19 20 21 22 23 24  25 26 27 28 29 30			JANUARY 2013       S     M     T     W     T     F     S       1     2     3     4     5       6     7     8     9     10     11     12       13     14     15     16     17     18     19       20     21     22     23     24     25     26       27     28     29     30     31			1
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30	31	Christmas Day University Holiday			0	





# Mission Statement

The Laboratory for Laser Energetics (LLE) of the University of Rochester is a unique national resource for research and education in science and technology. The Rochester area has a history of innovation and provides a unique setting for LLE within a technologically sophisticated community. Established in 1970 as a center for the investigation of the interaction of intense radiation with matter, the Laboratory has a five-fold mission:

- to conduct implosion experiments and basic physics experiments in support of the National Inertial Confinement Fusion (ICF) Program;
- 2. to develop new laser and materials technologies;
- 3. to provide graduate and undergraduate education in electro-optics, high-power lasers, high-energy-density physics, plasma physics, and nuclear fusion technology;
- 4. to operate the National Laser Users' Facility (NLUF); and
- 5. to conduct research and development in advanced technology related to high-energy-density phenomena.

The 2012 LLE Calendar contains information about many of the Laboratory's programs.

We hope that you enjoy using your copy of the LLE Calendar and wish you a productive and fulfilling 2012.

UNIVERSITY & ROCHESTER

#### 2013

**FEBRUARY** 

#### MARCH

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**JANUARY** 

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## **APRIL**

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#### 2014

#### **JANUARY**

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MARCH

#### **APRIL**

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#### JULY

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#### OCTOBER

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#### **DECEMBER**

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28	29	30	31			



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