



Quantum and Non-Equilibrium Processes Division



Integrity ★ Service ★ Excellence

5 March 2013

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Division Chief

AFOSR/RTB

Air Force Research Laboratory

Report Documentation Page

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OVERVIEW



- Reorganization
- How we spend our money....
- PO's and their programs
- Summary and Conclusion



Goals of Reorganization



- Maintain strong 6.1 focus and improve scientific quality across AFOSR
 - Maintain semi-autonomy for program managers as subject experts
 - Enhance responsiveness to rapidly changing scientific environment
- Improve the ability to collaborate across all AFOSR portfolios
- Improve the ability to collaborate across the International Enterprise



AFOSR Reorganization



FY 12/02 Authorized
OFF/Enl/Civ/Total
20/0/154/174
CME: 27

AFRL/PK

AFOSR/CL
Director
SES
0/0/6/6
CME: 0

DD
Deputy Director
O-6
1/0/2/3
CME: 0

OM
Operations Mgt
DO-4
0/0/6/6
CME: 0

IT
Info Technology
DO-4
0/0/2/2
CME: 22

JA
Judge Advocate
O-4
2/0/0/2
CME: 0

RT
Basic Science Program
Office
SES
0/0/2/2
CME: 0

RP
Business Integration
DR-4
0/0/2/2
CME: 0

IO
International
Science Prog Office
O-6
1/0/0/1
CME: 0

ITA
Information Assurance
DO-2
0/0/7/7
CME: 0

ITM
Information Management
DO-2
0/0/6/6
CME: 0

RPF
Financial Mgt
DO-4
0/0/2/2
CME: 0

RPP
Plans and Budget
DR-4
1/0/6/7
CME: 0

PK
Contracting
DO-4
0/0/40/40

RPFW
Resources Mgmt
0/0/5/5
CME: 0

RPFB
Direct Funds
0/0/5/5
CME: 0

RFFF
External Funds
0/0/5/5
CME: 0

RTA
Dynamical Sys
and Control
DR-4
0/0/8/8
CME: 0

RTB
Quantum & Non-
Equilibrium
Processes
DR-4
0/0/8/8
CME: 0

RTC
Information,
Decision, &
Complex Networks
DR-4
0/0/7/7
CME: 0

RTD
Complex Materials
and Devices
DR-4
1/0/7/8
CME: 0

RTE
Energy, Power,
and Propulsion
DR-4
0/0/6/6
CME: 0

IOA
Asia
DR-4
4/0/6/10
CME: 0

IOE
Europe
O-5
4/0/8/12
CME: 0

IOS
South America
DR-4
0/0/4/4
CME: 0

ION
North America
DR-4
6/0/4/10
CME: 5

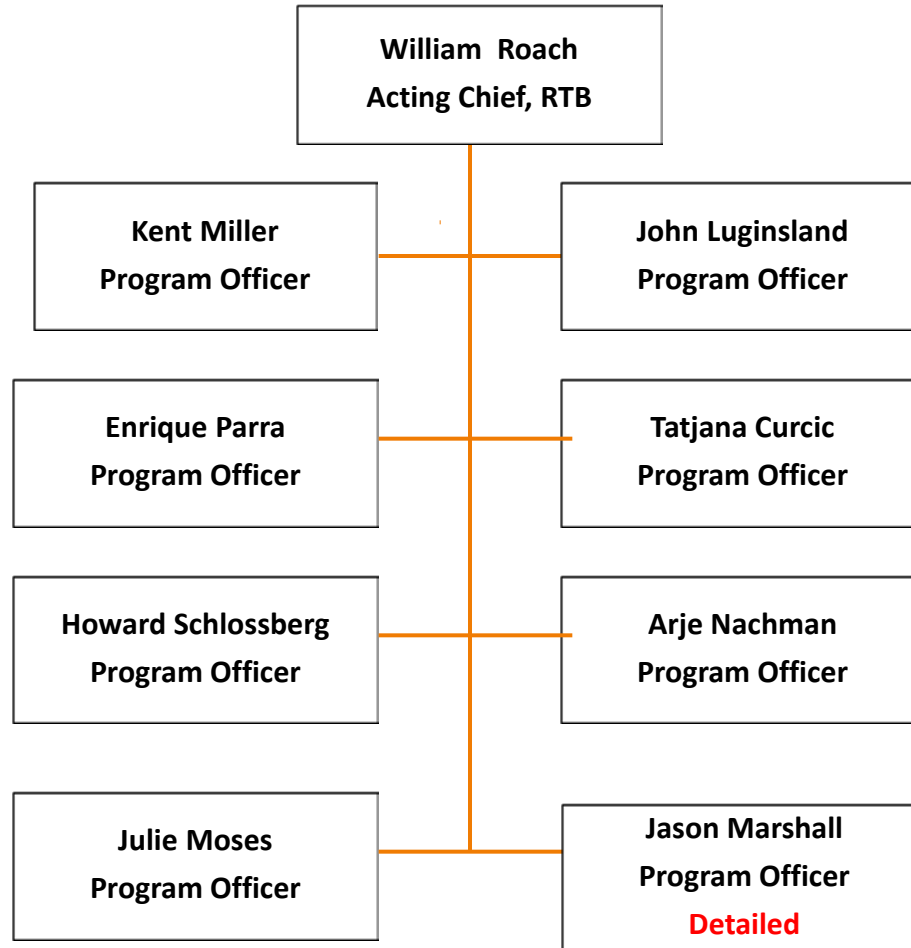
David Stargel William Roach Robert Bonneau Hugh DeLong John Schmisser





RTB Organizational Chart

Quantum & Non-Equilibrium Processes

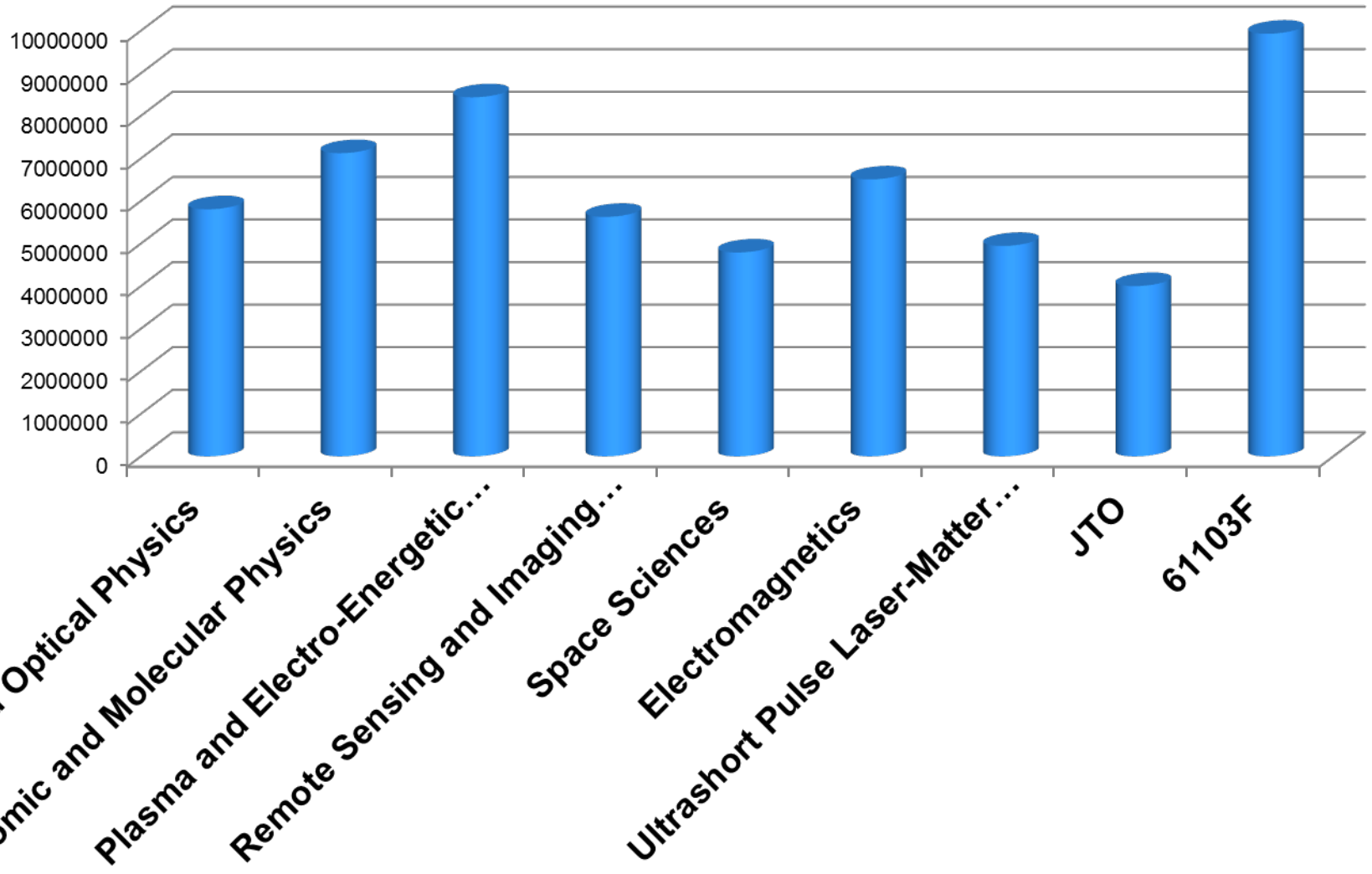




Core + URI

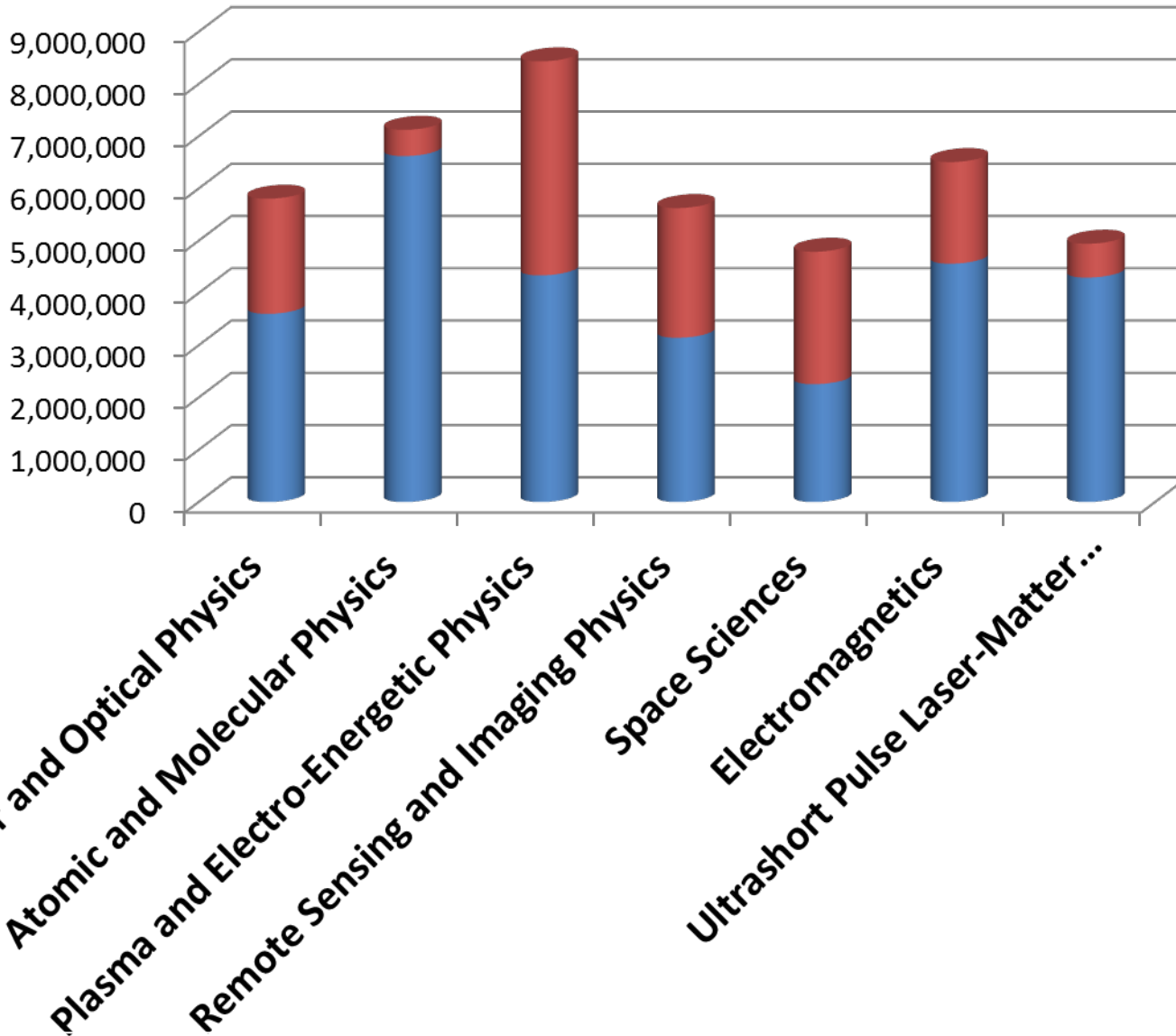


Total RTB "Work" ~\$57M





LRIR + CORE



■ ~ 34% To LRIR
■ ~ 66% To Universities



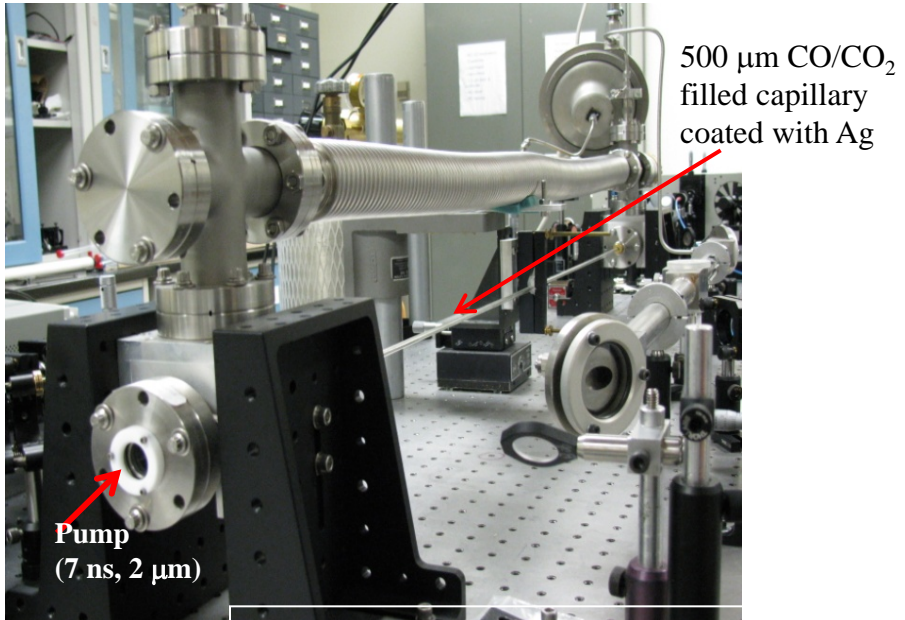
RTB PO's Portfolio's



- **Dr. Howard Schlossberg**

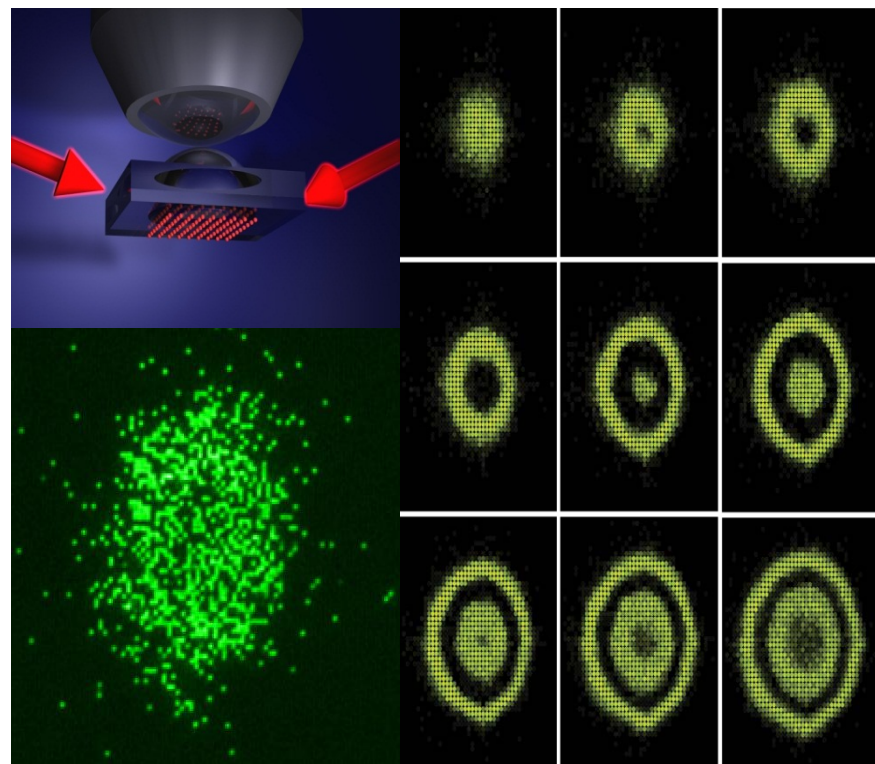
Laser and Optical Physics

- High Average Power Solid-State Lasers
- Modest Power Lasers
- Nonlinear Optics
- Microplasma Arrays



- **Dr. Tatjana Curcic**

Atomic and Molecular Physics



Cold Atom Microscope
Markus Greiner, Harvard



RTB PO's Portfolio's



- **Dr. John Luginsland**

**Plasma & Electro-energetic
Physics**

“Bumpy” Magnetron with ICEPIC

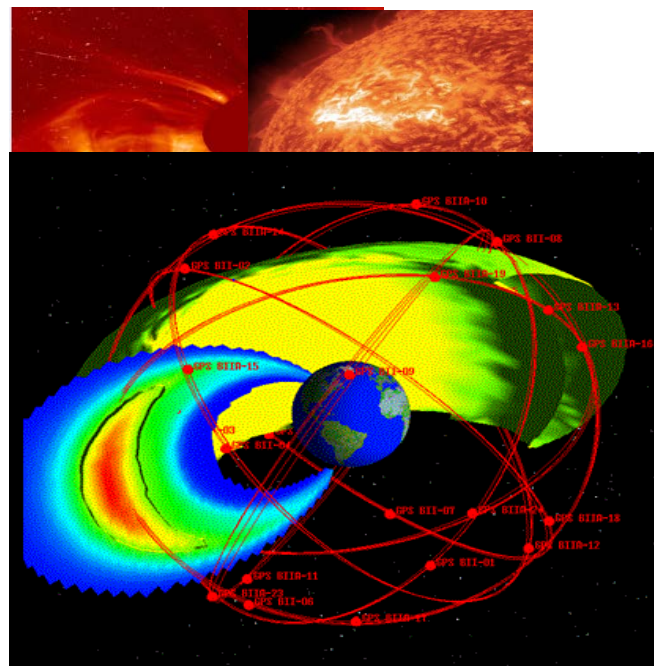


Relativistic Magnetron

Courtesy M. Bettencourt, AFRL/RDH

- **Dr. Kent Miller**

**Remote Sensing & Imaging
Physics and Space Sciences**



Space Weather effects include:

- satellite drag
- radiation belt perturbations
- communication/navigation/surveillance



RTB PO's Portfolio's

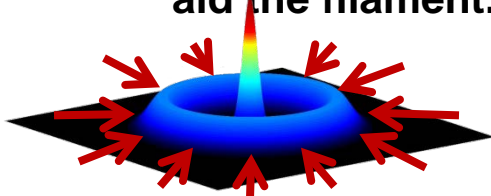


• Dr. Arje Nachman

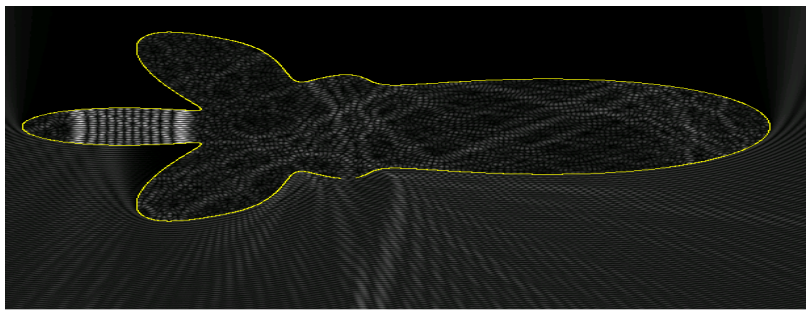
Electromagnetics

Interrogation (Modeling/Simulation) of Linear/Nonlinear Maxwell's Eqns.

Energy from the dress flows inwards to aid the filament.



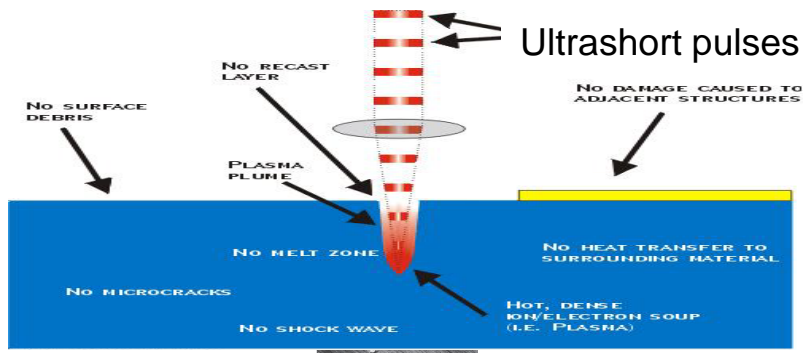
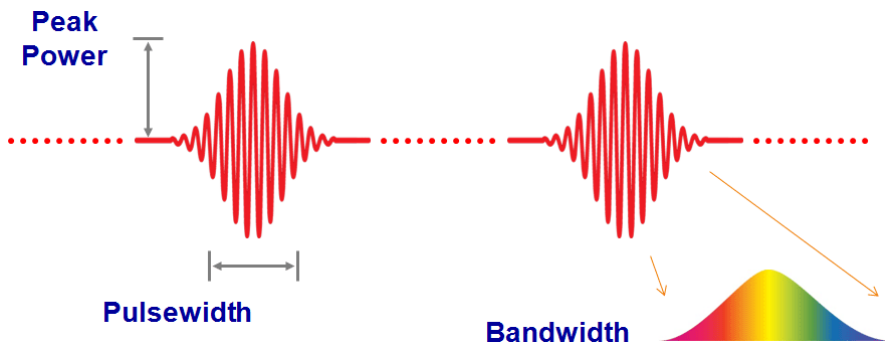
Localized cavity field more intense than incident field & High sensitivity to parameters (e.g. incidence angle)



• Dr. Enrique Parra

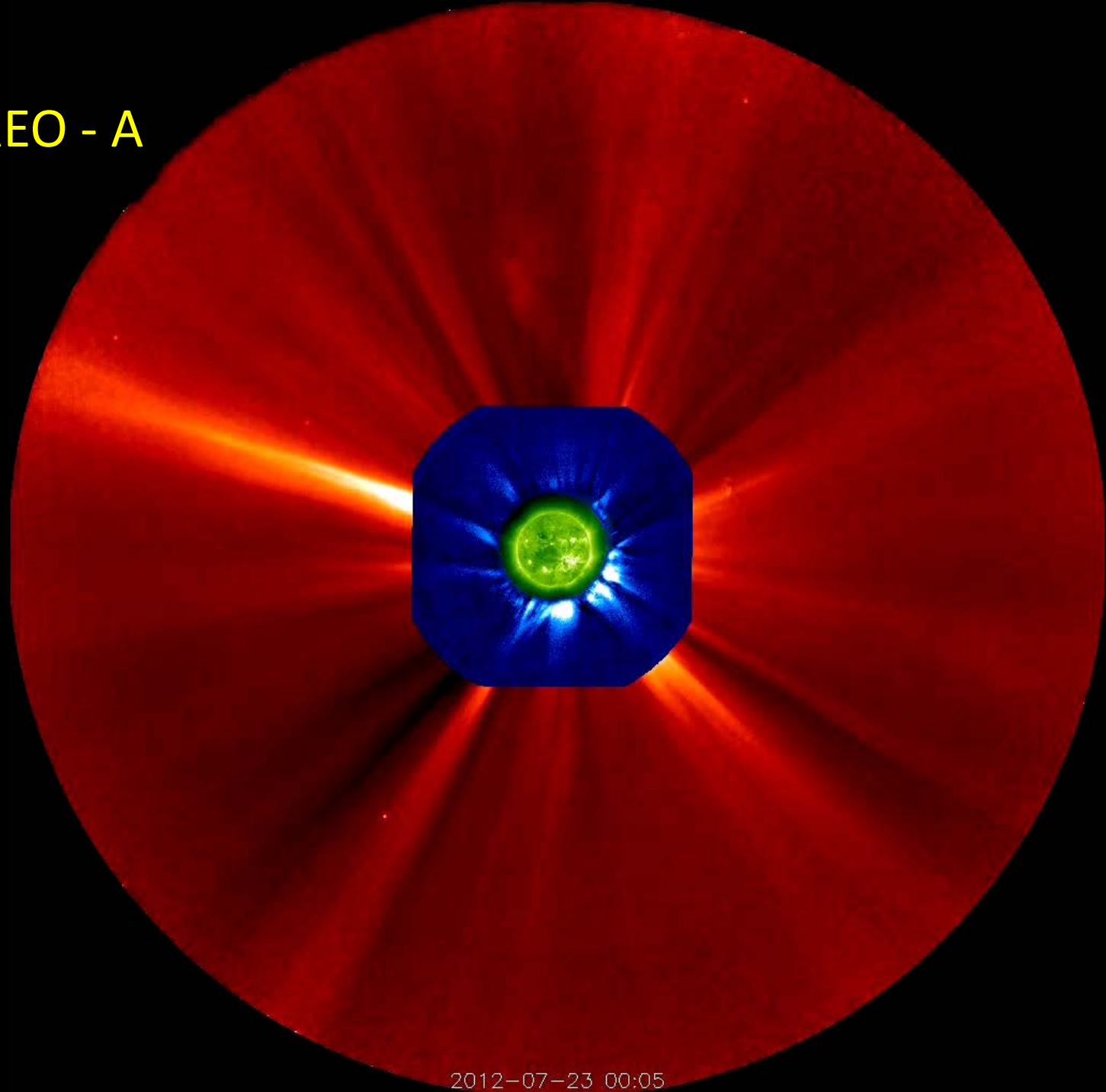
Ultrashort Pulse Laser-Matter Interactions

Understand and control light sources exhibiting extreme temporal, bandwidth and peak power characteristics.





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BACK UP SLIDES

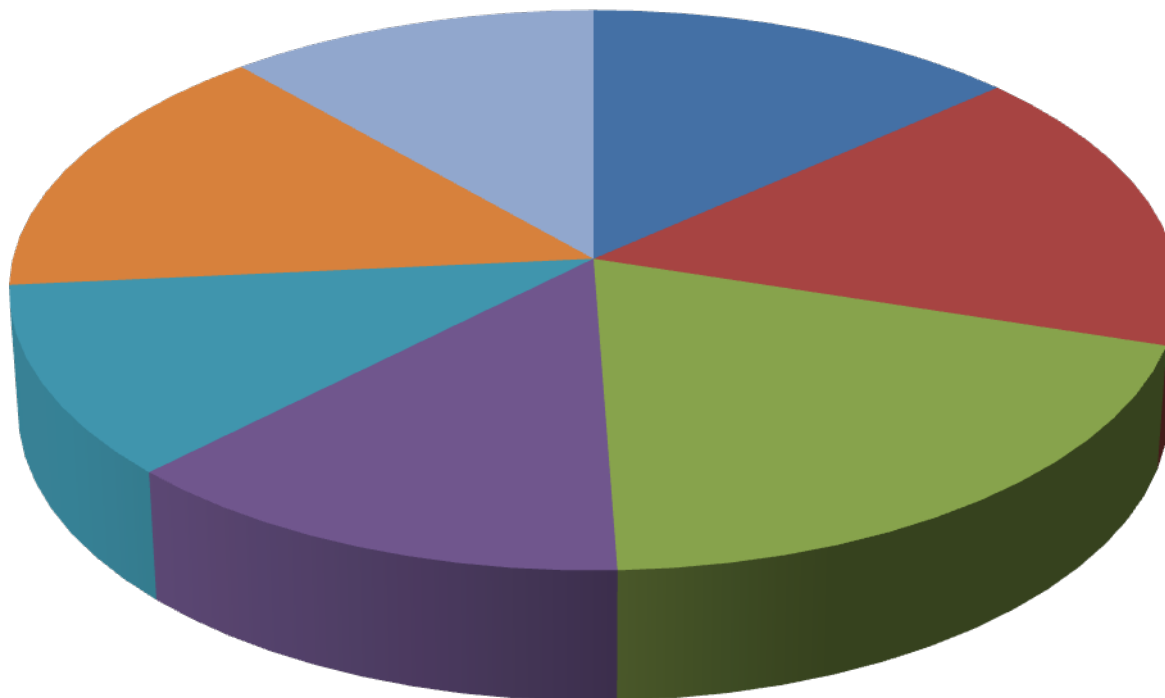




Core Portfolio Profile



AFOSR/RTB (\$43M on 61102F)



- Laser and Optical Physics
- Atomic and Molecular Physics
- Plasma and Electro-Energetic Physics
- Remote Sensing and Imaging Physics
- Space Sciences
- Electromagnetics
- Ultrashort Pulse Laser-Matter Interactions