

About Omics Group

[OMICS Group](#) International through its Open Access Initiative is committed to make genuine and reliable contributions to the scientific community. [OMICS Group](#) hosts over 400 leading-edge peer reviewed Open Access Journals and organize over 300 International Conferences annually all over the world. OMICS Publishing Group journals have over 3 million readers and the fame and success of the same can be attributed to the strong editorial board which contains over 30000 eminent personalities that ensure a rapid, quality and quick review process.

About Omics Group conferences

- [OMICS Group](#) signed an agreement with more than 1000 International Societies to make healthcare information Open Access. [OMICS Group](#) Conferences make the perfect platform for global networking as it brings together renowned speakers and scientists across the globe to a most exciting and memorable scientific event filled with much enlightening interactive sessions, world class exhibitions and poster presentations
- Omics group has organised 500 conferences, workshops and national symposium across the major cities including San Francisco, Omaha, Orlando, Raleigh, Santa Clara, Chicago, Philadelphia, United Kingdom, Baltimore, San Antonio, Dubai, Hyderabad, Bangaluru and Mumbai.

**SPACE INVADER ASTEROIDS
DETECT AND DETER
GEOSCIENCE MEETS
ASTROSCIENCE**

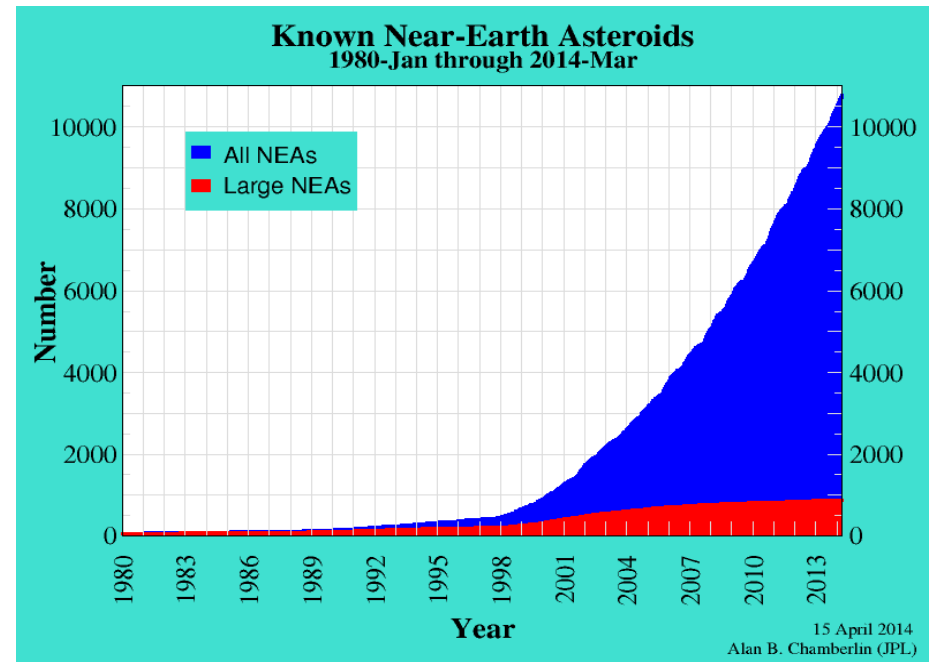
Douglas R. McCarter

McCarter Machine Inc. dba, McCarter
Technology Inc.

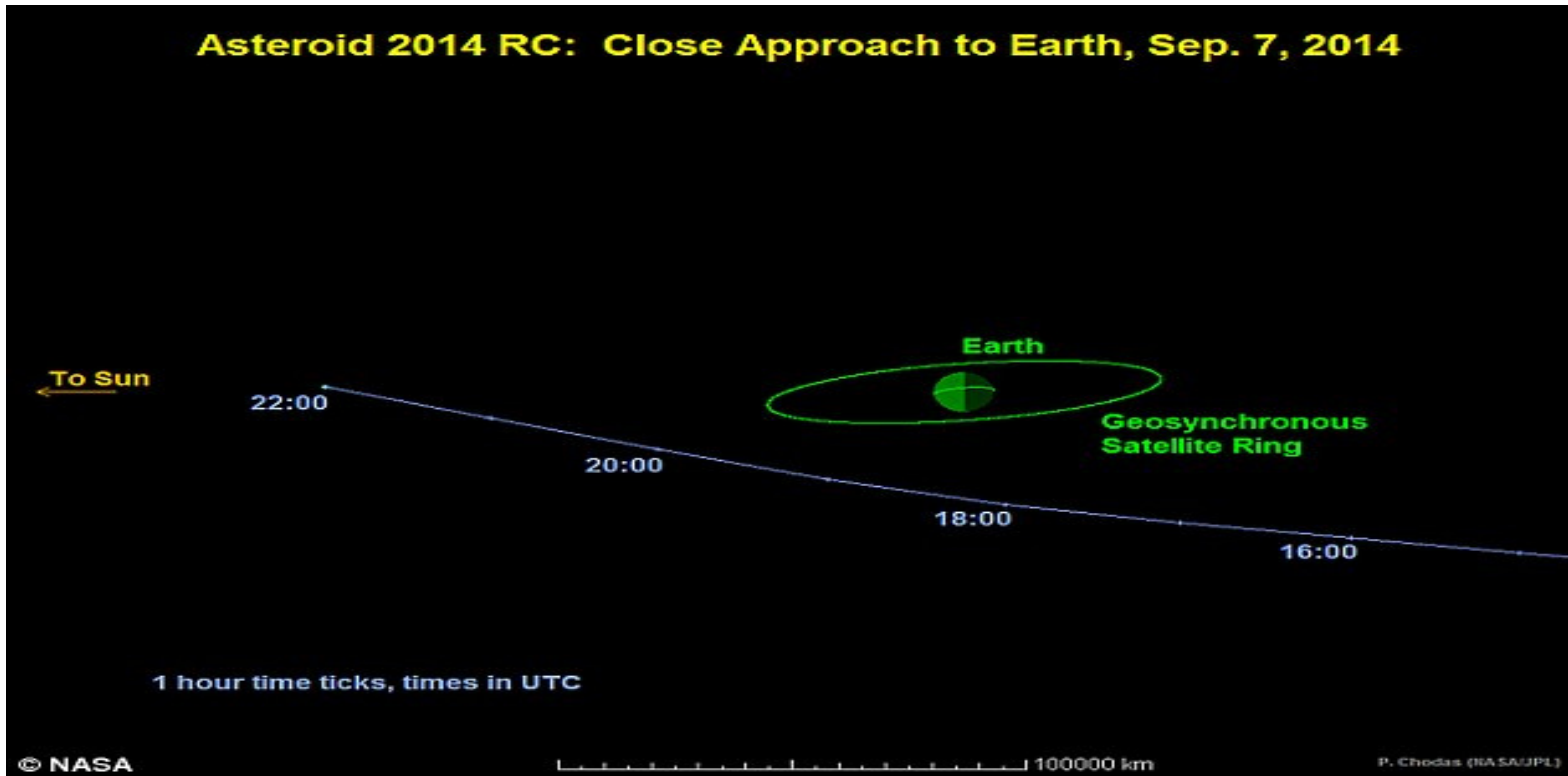
Lasers, Optics & Photonics Philadelphia Sept 08-10, 2014

THE PROBLEM -

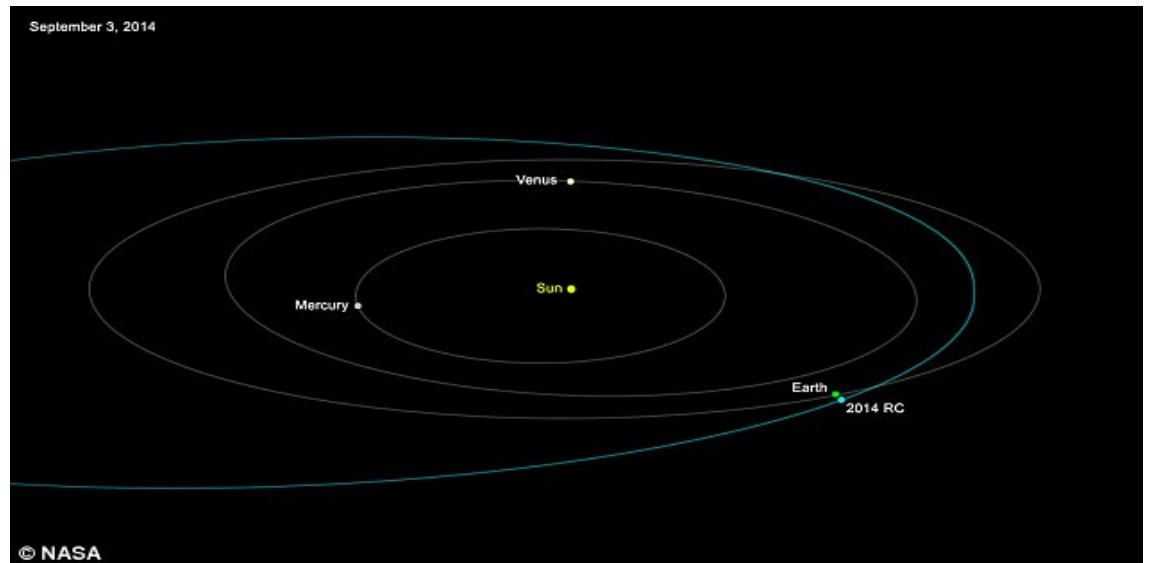
- Many dangerous NEOs
 - We see many, < 1.0%
 - Since 2001 Unseen
 - 28 NEOs struck earth
 - With nuclear force
- We can't see unless:
 - Sufficiently large
 - Not traveling in a path hidden by the sun
- If impending earth collision, no good options
- Urgent minimum action: Early warning system



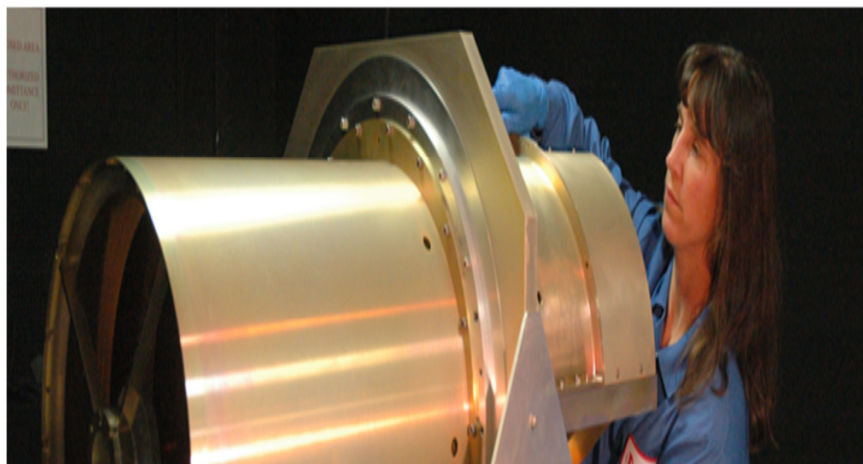
Asteroid 2014 RC: Close Approach to Earth, Sep. 7, 2014



Sept 07 2014

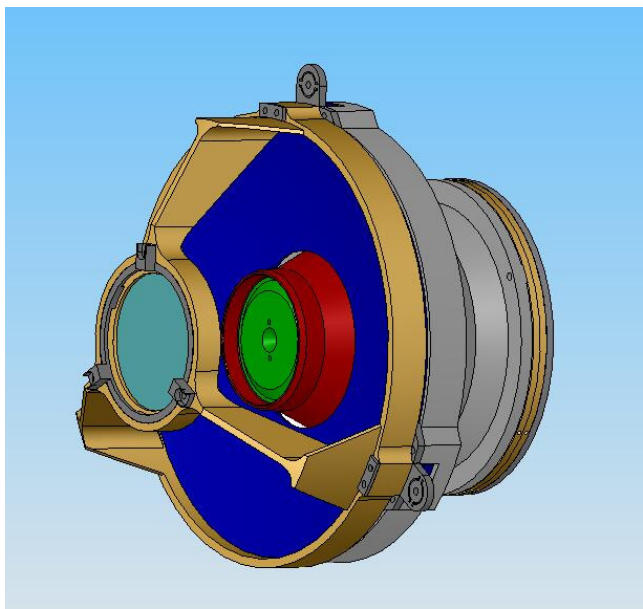


JPL Aluminum WISE



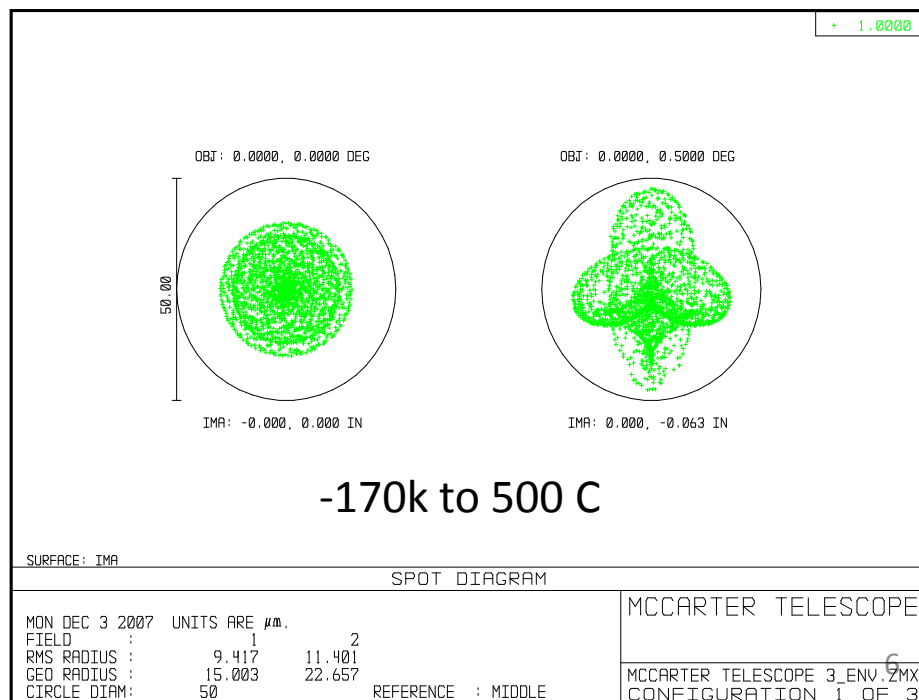
Axial Displacement Error

20 degrees Celsius
Temperature change



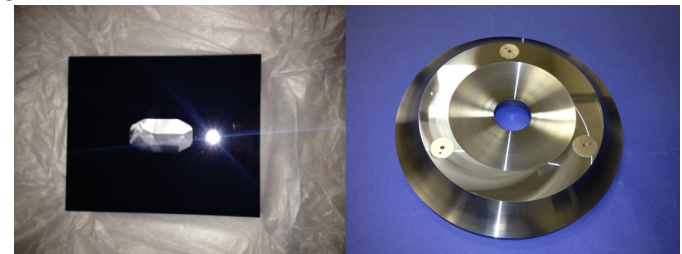
6/24/14

McCarter CAIT



WHY SC-SI?

- Combination of properties superior for space based high energy applications:
 - Lightweight, stiff and strong
 - THE BEST combination of thermal properties:
 - Even better at lower temperatures
- Lowest floor-to-floor cost and schedule of all competing materials
 - Readily available material
 - McCarter proprietary/patented processes:
 - CAD/CAM with conventional tools
 - Glass Frit Bonding
 - McCarter Super Finishing



Silicon Infrared Synergy for Earth or Space to Provide Accurate Position for Accurate Prediction



WHERE CAN SC-SI BE USED?

- For infra-red systems
 - Mirrors, lenses, prisms, windows, structures
- Size matters:
 - SC-Si can be as big as you need
 - McCarter's glass frit bonding makes it possible
- Attachments
 - SC-Si to SC-S
 - SC-Si to metal



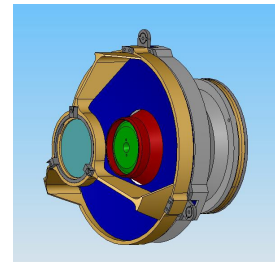
MUST DEFLECT OR DESTROY

- Many scenarios to capture, deflect or destroy
- Space borne high energy lasers with SC-Si mirrors:
 - Only reliable solution to deflect/destroy asteroids
- Mirror material is critical
 - Can not blur or creep in operation
 - “Accurate Positioning = Accurate Prediction”
- SC-Si is the solution because:
 - History of high energy laser mirror successes
 - Space qualified



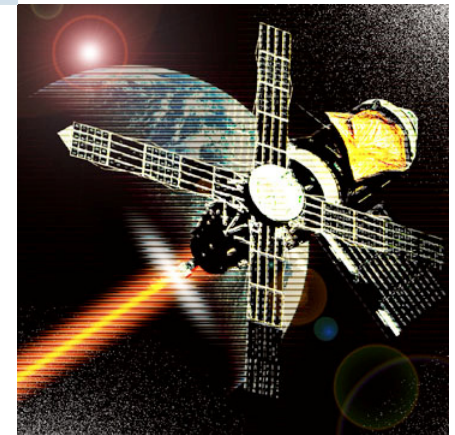
PROPOSED SCENARIO

- Detection:
 - Array of wide angle cryostable all silicon imaging telescopes
- Deflect or destroy:
 - Array of space-borne silicon commercial high energy lasers
 - Destroy small ones
 - Deflect larger one's orbit
 - Ablation of selected area(s)
 - Capture for study if possible

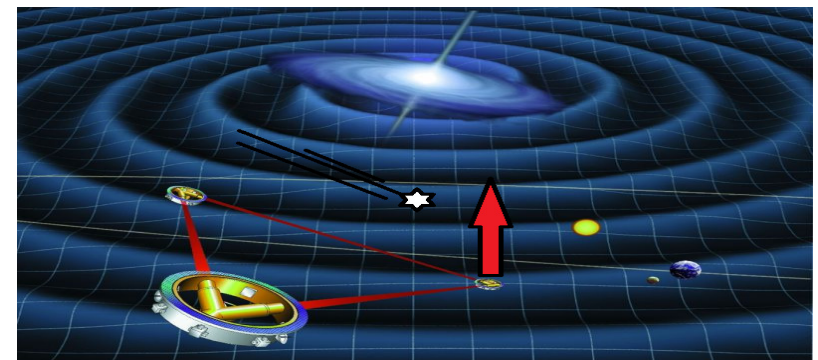


McCarter CAIT

McCarter SBL



McCarter FCF



MAKE IT HAPPEN

- Funding required now
 - International effort required
- SC-Si available now up to 460mm (18”) in diameter
- Facilities in place to make it happen now
- But mature designs are needed
 - Sentinel?
 - DE-STAR?
 - NEOWISE replacement?
 - New SC-Si D/D (Detect/Deter)
 - All are needed
 - Lessons learned combine to build the best/most reliable systems
 - Unlimited resource potential and learning from captured asteroids



ALL IT TAKES IS MONEY



- Early Warning System 7 years not 7 days with SCSi Telescopes
- Maintain Communication with all Efforts
- Build FCF Solar Powered HEL Systems Adjacent to Protect Geosynchronous Satellite Orbit
- Build Space Fence for Moon Orbit Collection
- Build Solar powered Space HEL Drones for Attack

The “Beast is only a Rock”



Let Us Meet Again

We welcome all to our future group conferences
of Omics group international

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