



DSi™
DEEP SPACE INDUSTRIES



David Gump, CEO
May 2013

Leading space entrepreneurs & experts



Rick Tumlinson

Chairman

MIR space station
Founding X Prize Trustee
Signed first citizen explorer



Dr. John Lewis

Chief Scientist

Global authority on asteroid resources
and potential threats



David Gump

CEO

Co-founded t/Space and
Astrobotic Technology
First TV ad on Intl. Space Station



Stephen Covey

Director of Research & Development

Inventor of MicroGravity Foundry and chair of
asteroid track for 2013 International Space
Development Conf.



Kirby Ikin

President

Satellite market analysis and
risk management; co-founder of
Orbital Recovery LLC



Mark Sonter

Director of Mining and Processing

Scientific consultant in Australian
mining and metallurgical industries;
asteroid research at U. of Arizona



John Mankins

Chief Technical Officer

Directed \$850M space technology
program at NASA; global leader in
Space Solar Power satellites



Dr. Marc Rayman

Advisor

Chief engineer of two NASA asteroid
missions, including first to use ion
propulsion and artificial
intelligence

Any mass in high orbit is valuable
due to launch costs: \$17 million per ton



This bucket-load mass
is worth \$80M



This water is worth \$800M

Typical composition and value

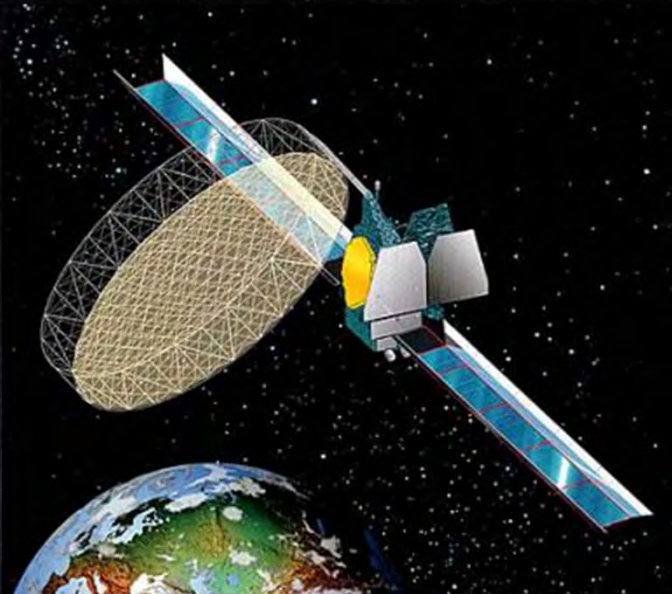
H₂O in clays or salts, and/or
asphalt-like material, and/or
nickel-iron metal and
Platinum Group Metals

Water and bulk metals
in one ton of asteroid
worth > **\$1 million**

Five-meter asteroid is **200-500 tons**

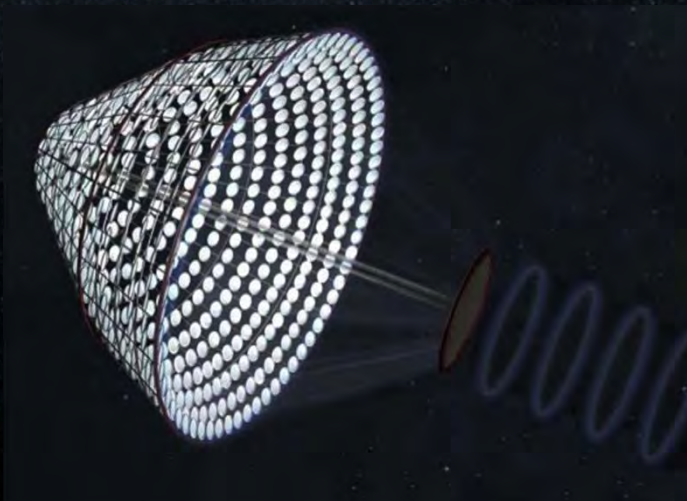


Markets for asteroid resources



Communications satellites
Extend life or expand capacity
with asteroid fuel

...replaced by large-scale and
extensible **comm platforms**,
which build skills to create...



Solar power satellites
Clean electricity to Earth

Markets for asteroid resources



Fuel for crews on
Mars and asteroid
expeditions

Platinum, gold, silver, nickel,
chromium shipped to Earth

Markets on Earth

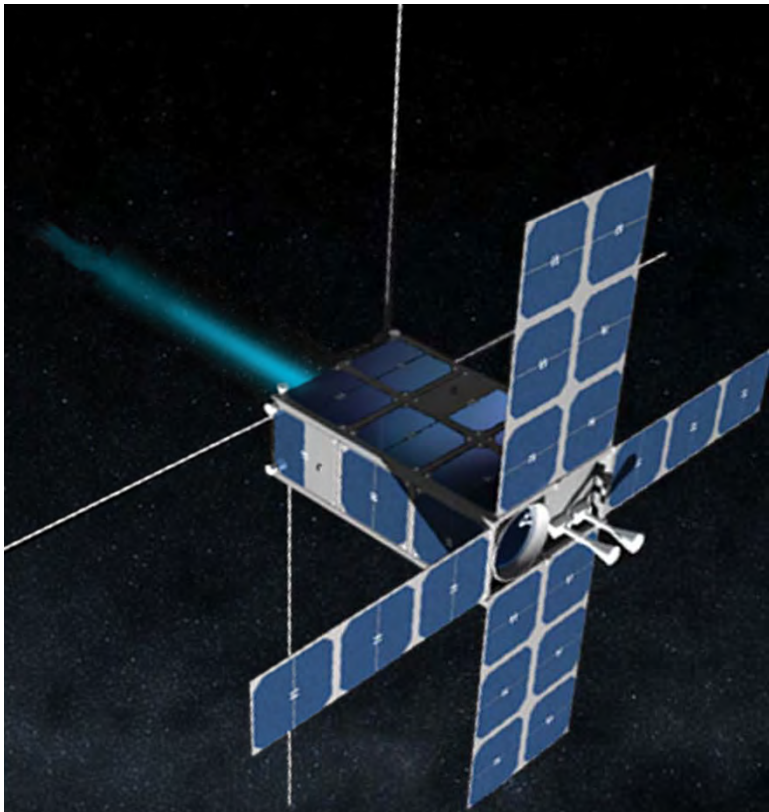
	Tonnage that Produces \$200M value	% of Today's Annual Market
Platinum	3.6	1.8%
Total PGE	5.2	1.2%
Gold	6.2	0.2%
Silver	154	0.8%
Nickel	12,500	0.8%
Chromium	15,010	0.8%

Markets on Earth

	Tonnage that Produces \$200M value	% of Today's Annual Market	Tonnage that Produces \$1B value	% of Today's Annual Market
Platinum	3.6	1.8%	18	9.4%
Total PGE	5.2	1.2%	26	5.7%
Gold	6.2	0.2%	30	1.3%
Silver	154	0.8%	860	4.0%
Nickel	12,500	0.8%	62,500	4.0%
Chromium	15,010	0.8%	75,053	4.3%

Fireflies

one-way prospecting trips



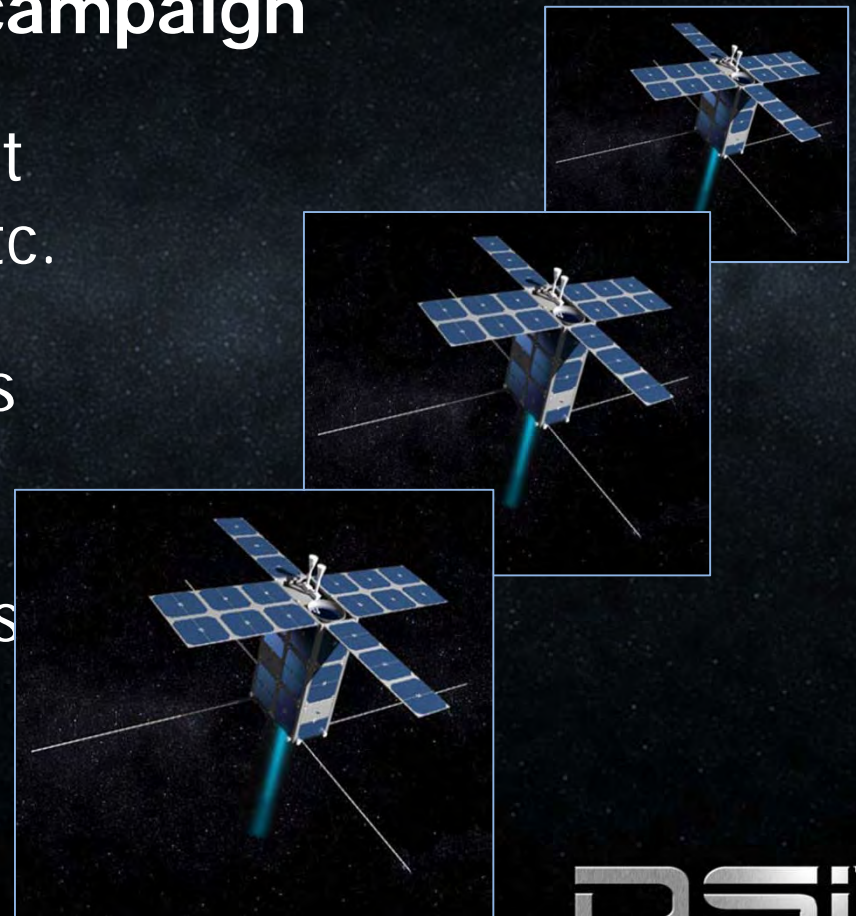
FireFly Campaign: Three in quick succession

Price: \$20 million for the campaign

Reduces risks from component malfunction, operator error, etc.

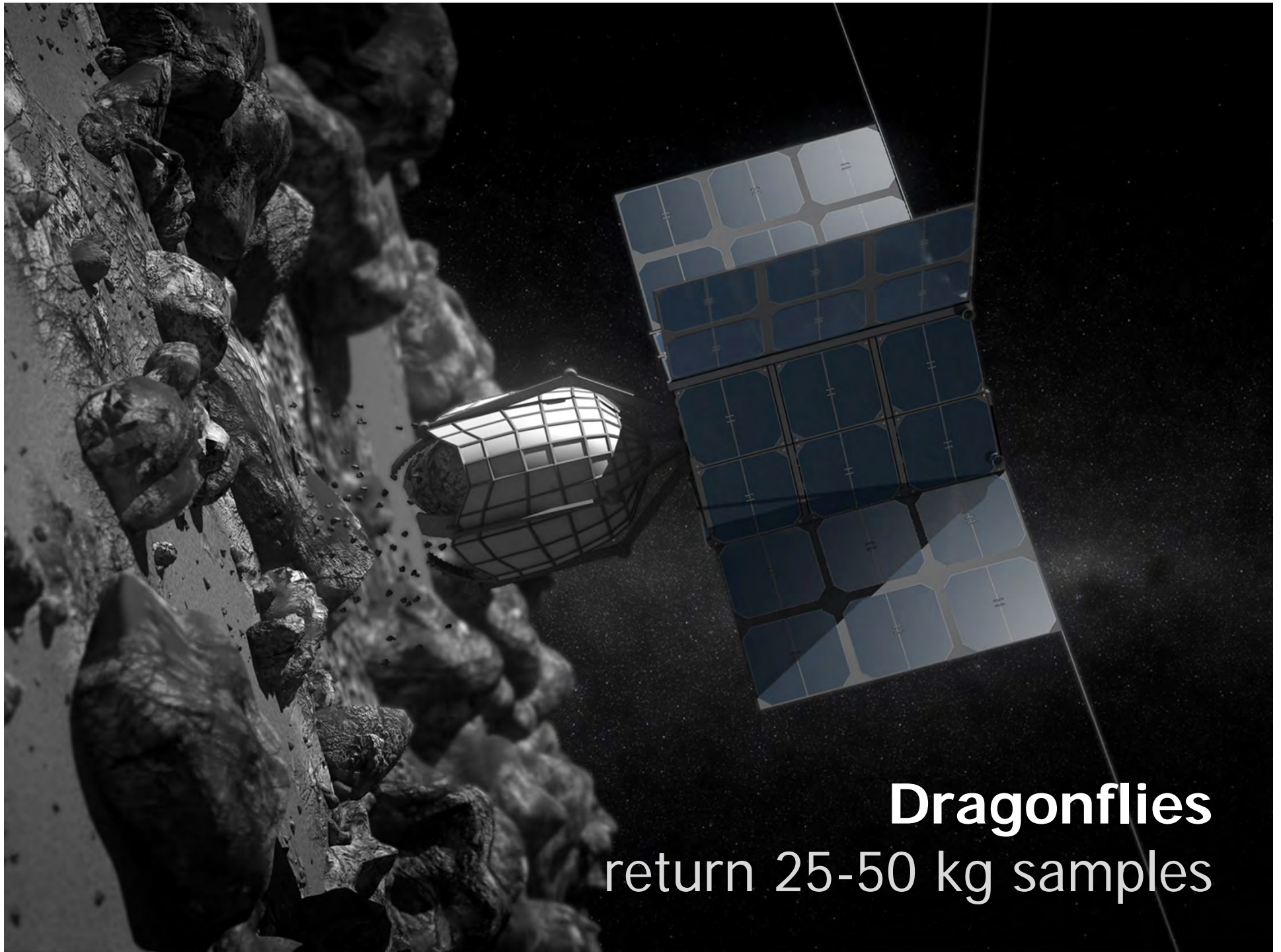
Launched on different vehicles

Price split among government agencies & corporate sponsors



Costs are plummeting

- **Spacecraft Miniaturization**
- **Computing Power**
- **Communication Capabilities**
- **New launch vehicles**
- **Tools**



Dragonflies
return 25-50 kg samples

Harvestors™ in 2020



Information only for investors

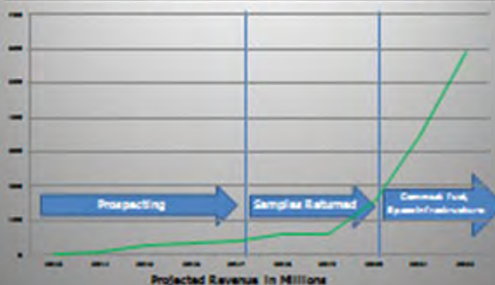
DSI's Planetary Defense plan

Sentry Line System

- Scramble in-space interceptors to inspect newly discovered close-pass asteroids to get data for later deflection
- Key data to know about city-killer asteroids: are they solid monoliths or rubble piles?
- Four guaranteed intercepts for \$86M



Major markets served by 2022: commsat fuel, space infrastructure



Firefly mass and budget estimates

	Mass (kg)	Cost (\$M)	Cost (\$M)
Engine	100	1.0	1.0
Structure	100	1.0	1.0
Propulsion	100	1.0	1.0
Power	100	1.0	1.0
Thermal	100	1.0	1.0
Avionics	100	1.0	1.0
Science	100	1.0	1.0
Launch	100	1.0	1.0
Orbit	100	1.0	1.0
Return	100	1.0	1.0
Disposal	100	1.0	1.0
Total	1000	10.0	10.0

21

22

23

Quarterly P&L Projection to 2015

	2012	2013	2014	2015
Revenue	100	100	100	100
Cost of Sales	50	50	50	50
Gross Profit	50	50	50	50
Operating Expenses	20	20	20	20
Operating Income	30	30	30	30
Net Income	20	20	20	20

Profit before taxes (PBT)

Dragonfly mass and budget estimates

	Mass (kg)	Cost (\$M)	Cost (\$M)
Engine	100	1.0	1.0
Structure	100	1.0	1.0
Propulsion	100	1.0	1.0
Power	100	1.0	1.0
Thermal	100	1.0	1.0
Avionics	100	1.0	1.0
Science	100	1.0	1.0
Launch	100	1.0	1.0
Orbit	100	1.0	1.0
Return	100	1.0	1.0
Disposal	100	1.0	1.0
Total	1000	10.0	10.0

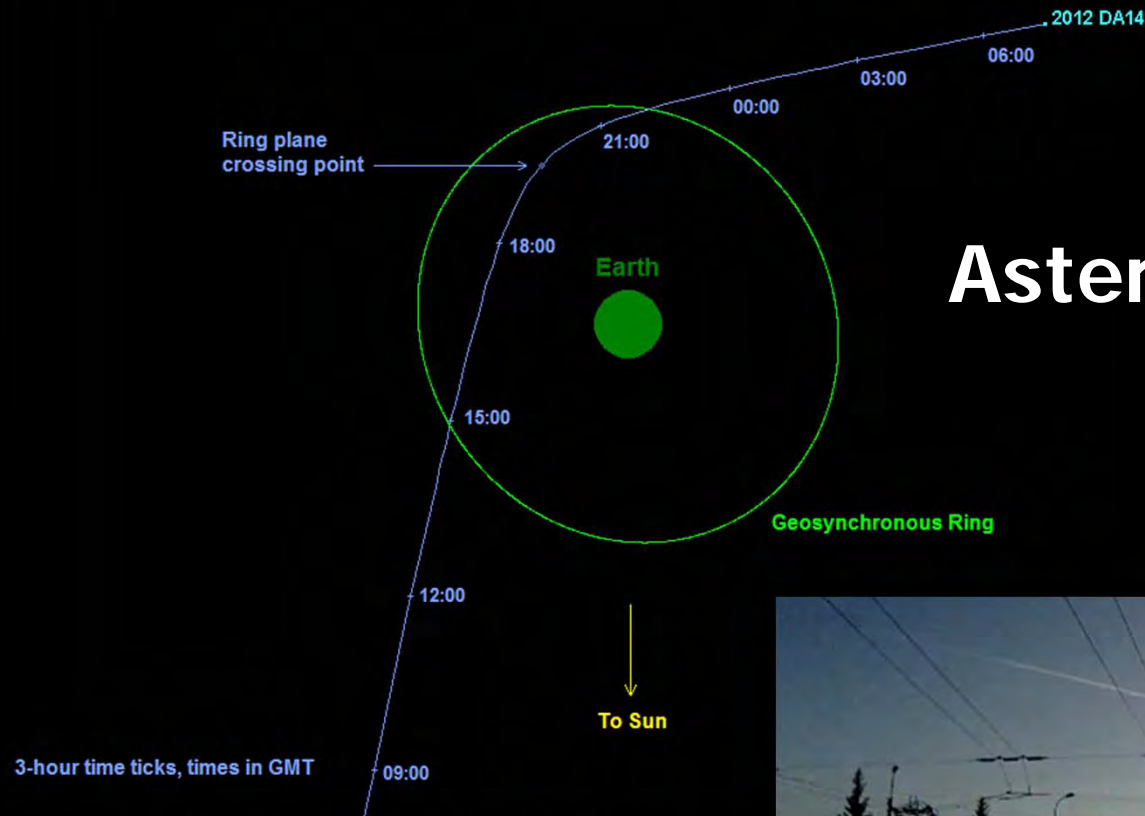
Ten Year P&L Projection

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenue	100	100	100	100	100	100	100	100	100
Cost of Sales	50	50	50	50	50	50	50	50	50
Gross Profit	50	50	50	50	50	50	50	50	50
Operating Expenses	20	20	20	20	20	20	20	20	20
Operating Income	30	30	30	30	30	30	30	30	30
Net Income	20	20	20	20	20	20	20	20	20

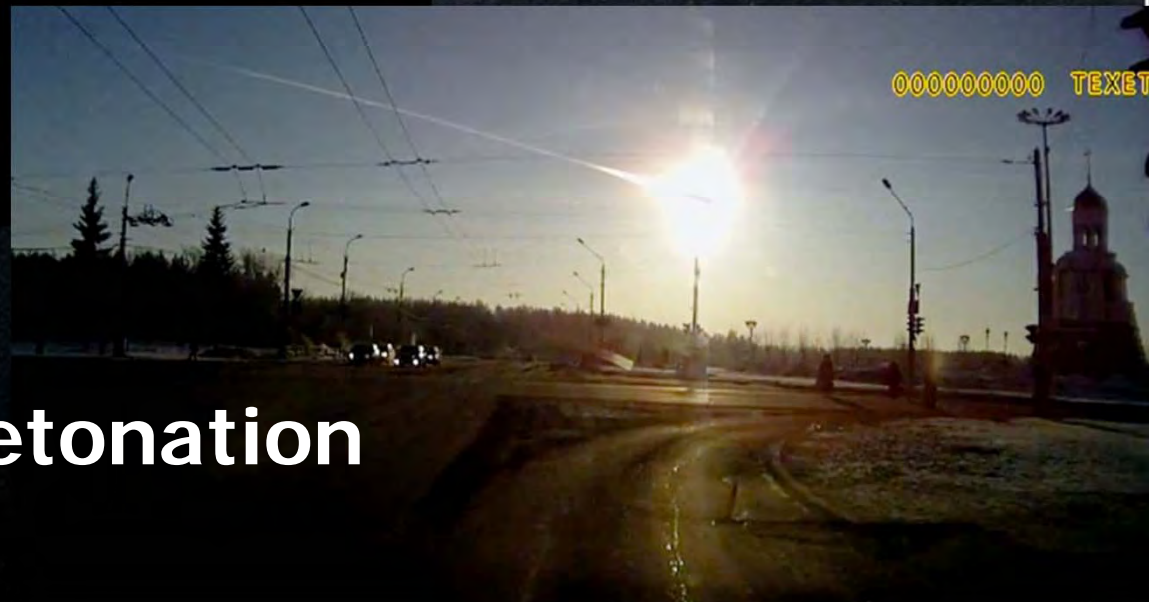
26

February's celestial wake-up call

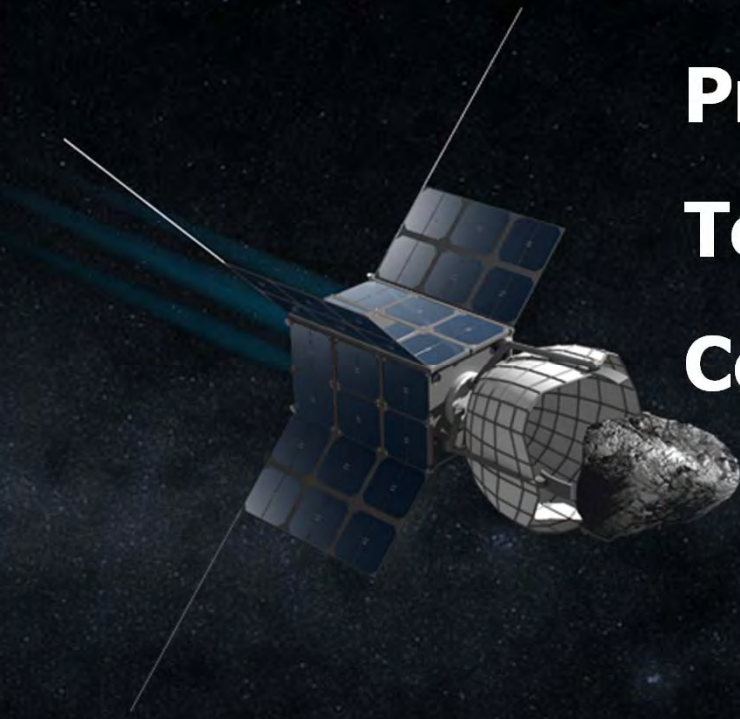
Asteroid 2012 DA14



The Russian Detonation



Early focus

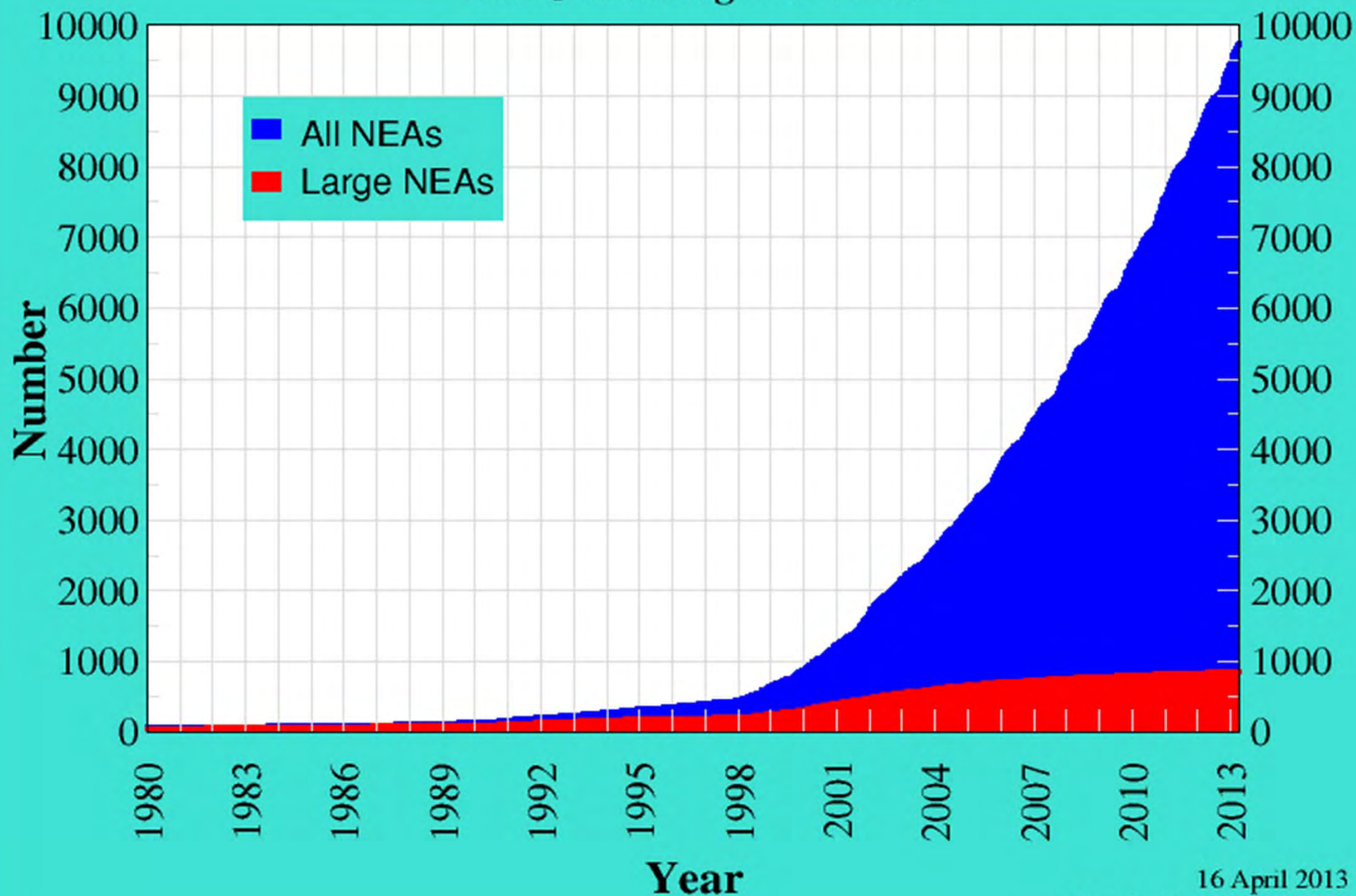


Prospecting - data and samples
Tech development contracts
Corporate sponsorships

... and Planetary Defense

Known Near-Earth Asteroids

1980-Jan through 2013-Mar



16 April 2013
Alan B. Chamberlin (JPL)

Dragonfly Program

- Prove Geochemistry
- Prove material properties
- Samples for science
- Samples for collectors
- Feedstock for pilot processing

