



**NOOSPHERE**  
**VENTURES**  
Technology Knowledge Humanity

**WE INVEST IN  
SPACE TECHNOLOGY  
COMPANIES**

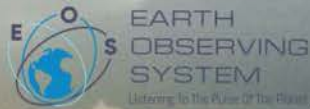
# ABOUT NOOSPHERE VENTURES

- Single-family office
- Significant financial flexibility
- Seed through Late Stage
- Equity, Mezzanine&Debt
- Found, Co-Found, Incubate & Invest
- Creative & flexible
- Disciplined
- Domain expertise
- Portfolio synergies
- USA headquartered, global outlook
- Thematic & opportunistic
- >\$250M invested in vertical since 2015
- Long space





# OUR PORTFOLIO SPACE COMPANIES



**EARTH  
OBSERVATION  
AND DATA  
ANALYSIS**

## SATELLITE

LOI signed  
Proven Small Sat  
manufacturer  
Track record of operating  
own constellation  
Disruptive next-gen  
platform

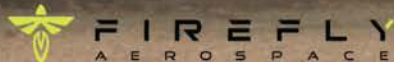
## SOFTWARE

LOI signed  
Flight software  
Global Navigation Satellite Systems  
Space situational awareness  
Significant ESA funding

**SUB-  
SYSTEMS**

**ORBITAL TRANSFER  
VEHICLES FOR DEPLOYING  
SATELLITES**

**LAUNCH**



**WITH EACH NEW SEGMENT, NEW OPPORTUNITIES COME**

# EOS DATA ANALYTICS SNAPSHOT



**EARTH  
OBSERVING  
SYSTEM**

Listening To The Pulse Of The Planet

**EOS is a company which provides a unique solution in EO imagery processing and analysis. Automated on-the-fly processing, data agnosticism, ability to use third party data and big amount of self-developed methods grants companies with the incredible competitive advantages**

## DEVELOPED TECHNOLOGY:

- Crop Monitoring - An advanced agro-tool for effective field monitoring
- High Resolution Images - A stand-alone "view only" data source for fast and easy access to the latest high-res images
- EOS Platform API - Brings a wide range of high-quality analytics to users and allows to easily integrate it into third-party tools
- LandViewer - An online GIS-assistant to search and on-the-fly process satellite data

## FACILITIES:

- R&D facility (programmers) in Ukraine

## ACHIEVEMENTS:

- Currently supporting 22 industry verticals with 1000+ of applications
- Blue Chip channel partners including: Airbus, Bloomberg, BP, Hitachi, Intel, Lexis Nexis, Pitney Bowes & Pro Agricola



# SPACE ELECTRIC THRUSTER SYSTEMS (SETS) SNAPSHOT

Developing full stack electric propulsion systems and subsystems for spacecrafts and satellite constellations. Offering competitive price/quality/terms ratio.

## SETS PRODUCTS



### Hall-Effect thrusters and Cathodes

Has been developed two types of thrusters with closed electron drift with maximum of power 600W



### Propulsion systems SPS25, SPS40

SETS provide innovative solutions for orientation and stabilization of spacecrafts

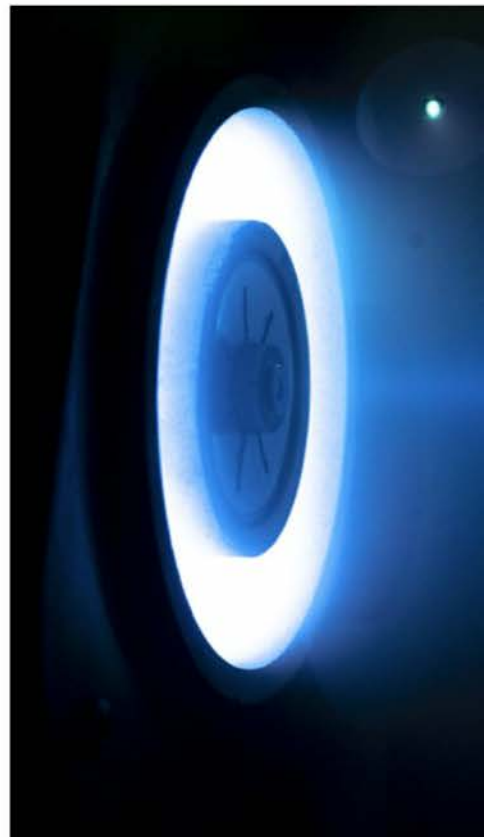
### Propulsion systems SPS25, SPS40

SETS provide innovative solutions for orientation and stabilization of spacecrafts



### Power Processing Unit

The Power Processing Unit includes all the elements for controlling and supplying the propulsion system Xenon Feed System (XFS)



# SNAPSHOT OF OUR PROJECTS: FIREFLY AEROSPACE



**Firefly is on track to deliver a US solution for the 1,000 to 4,000 kg payload class to LEO for a starting price of \$15 M**



## LAST ACHIEVEMENTS:

- Collaborating with Aerojet Rocketdyne to increase the performance of the launch vehicles
- Firefly Black, the subsidiary of Firefly Aerospace, was selected by the U.S. Air Force Space and Missile Systems Center's Small Launch and Targets Division as a launch service provider for the Orbital Services Program-4 (OSP-4).

## FACILITIES:

Headquarters and manufacturing facility: Austin, TX

Launch facilities: Vandenberg, CA and Cape Canaveral, FL

## TECHNOLOGY DEVELOPMENT:

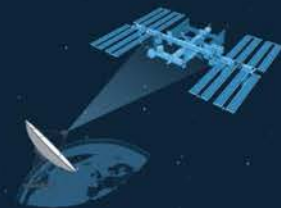
- Alpha Launch Vehicle—designed to send 630 kg into a 500-kilometer SSO, and 1,000 kg to lower altitude LEO, with a potential to reach 800 kg to SSO and up to 1,300 kg for LEO. Set to launch in 2020, with a mix of U.S. government and commercial satellites. Planning 2 missions in 2020, and 10 missions in 2021
- Beta – featuring a reusable 1st stage, will be able to lift 8,000 kilograms to LEO. Is expecting to introduce in 2021
- Gamma – a winged, reusable spaceplane, readiness by 2024–2025



# VISION OF EOS SAR CONSTELLATION



## ABOUT CONSTELLATION



Phase 0  
2021



Phase 1  
2022

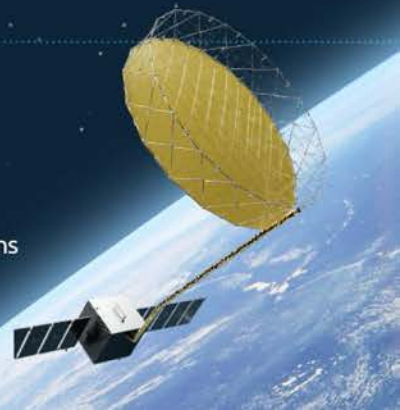


Phase 2  
2023



Phase 3  
2024

- Constellation of X-band SAR satellite
- Minimum 12 satellites
- Launched in batches of 3, combination of mid-inclination and polar orbits
- Ultra high resolution <math><0.3\text{m}</math> GSD
- Near real-time tasking via Inmarsat
- Precision orbit keeping for repeat pass InSAR
- Secure cloud-based tasking and data management
- Leverage commercial "bent-pipe" ground station providers
- Satellite leasing for authorised operators of dedicated ground stations
- Data products and VAS





# VISION OF EOS SAR CONSTELLATION



## SOME OBJECTIVES:

### Monitoring of subsidence and deformation of land cover



Example: Central California, Madera and Fresno counties

Surface displacement maps are constructed based on differential radar interferometry

### Monitoring floating roof oil tank



Example: Premium storage BV (Rotterdam)

Identify and measure change in the position of the tops of oil tanks over time using high resolution radar imagery

### Disaster support



Example: Grand Bahama. Consequence of Hurricane Dorian (category 5)

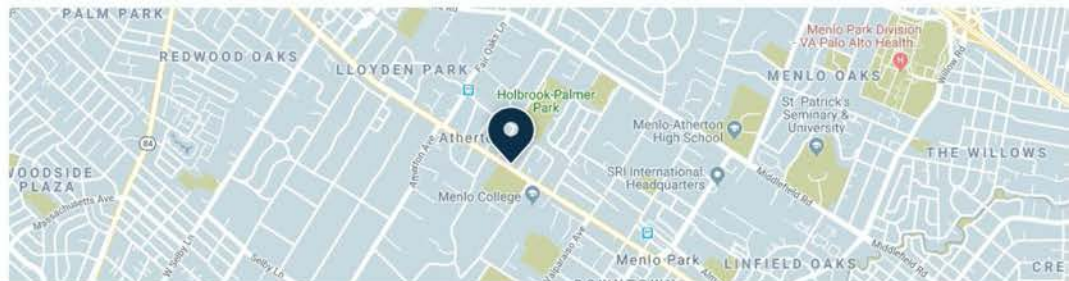
PULSAR will provide information to rapidly map out the extent of disasters and deliver reliable information to first responders



# CONTACT US



We are based in Menlo Park, CA  
and have a global presence



## PITCH US

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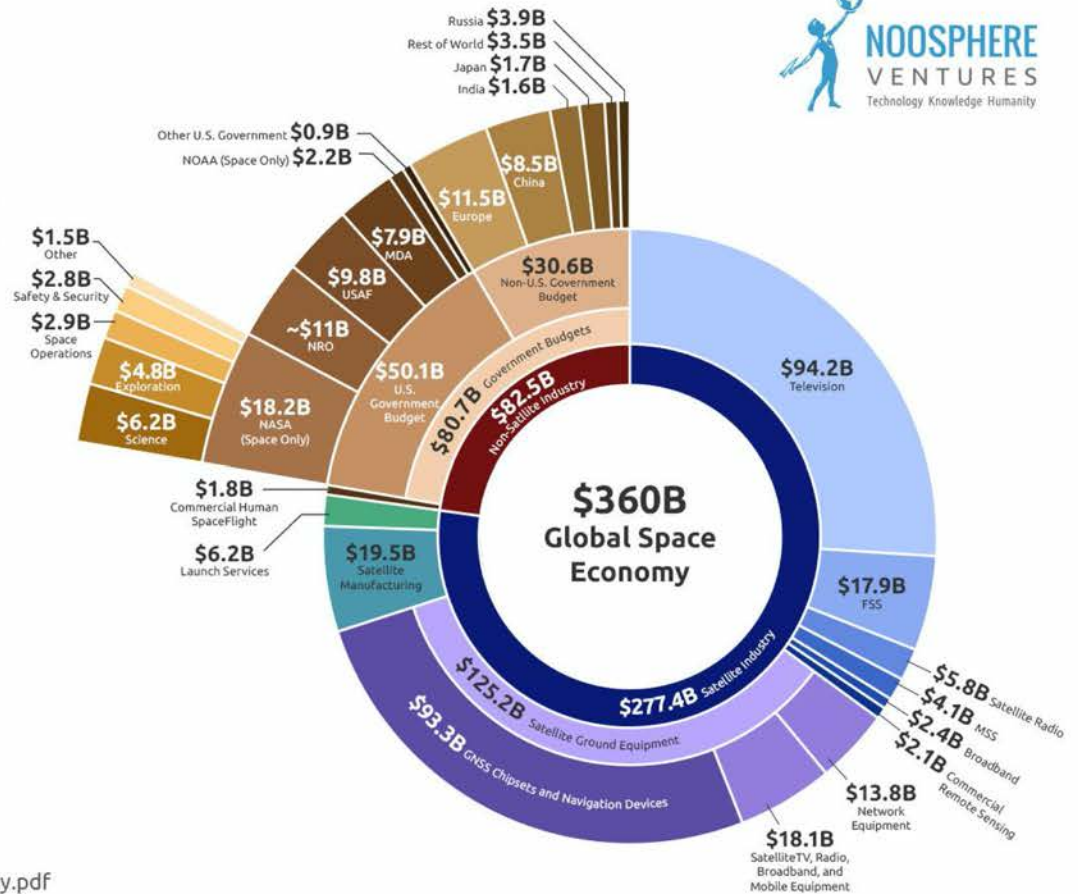
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## FOLLOW US



# MARKET OPPORTUNITIES: GLOBAL SPACE ECONOMY AT A GLANCE



Source: [www.brycotech.com/downloads/2018\\_Global\\_Space\\_Economy.pdf](http://www.brycotech.com/downloads/2018_Global_Space_Economy.pdf)



# MARKET OPPORTUNITIES: WORLD GOVERNMENT EXPENDITURES FOR SPACE PROGRAMS

World government expenditures for space programs (2018)\* total

**\$70.8 BILLION**

Budgets indicated for European countries include their contributions to ESA and Eumetsat;

\* Only countries with a budget of at least \$10 million appear on the map.

\*\* The United States is undersized (80%)

