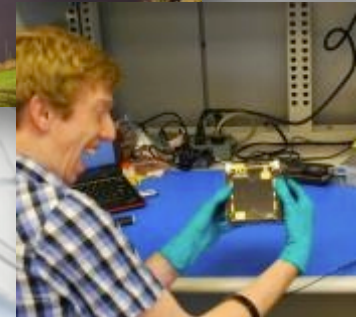
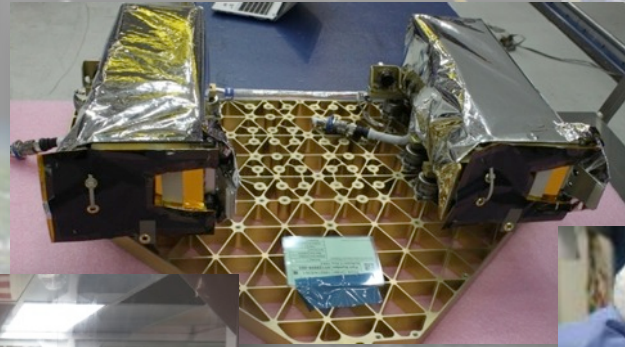


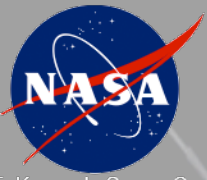
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# What's going on!



**“ELaNa is moving forward,  
launching CubeSat missions for  
CubeSat Launch Initiative (CLSI)  
and Science Projects!”**





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# ELaNa Launches Since Last Workshop



**ELaNa VIII – ORB 3**  
**Oct 28, 2014**  
**RACE**  
**JPL**



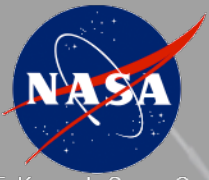
**ElaNa X – SMAP**  
**Jan 31, 2015**  
**FIREBIRD-2**  
*Montana State University*  
**GRIFEX**  
*University of Michigan*  
**ExoCube**



**ElaNa XI – AFSPC 5**  
**May 27, 2015**  
**LightSail**  
**ARC/**  
**The Planetary Society**

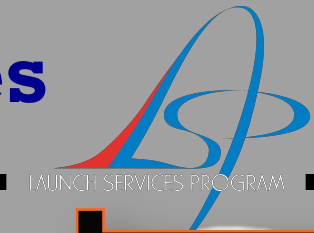






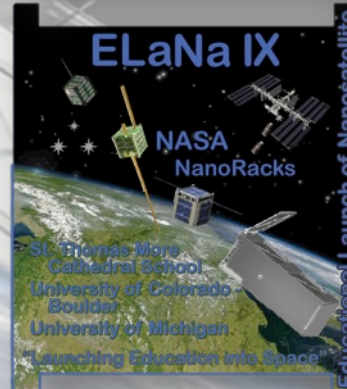
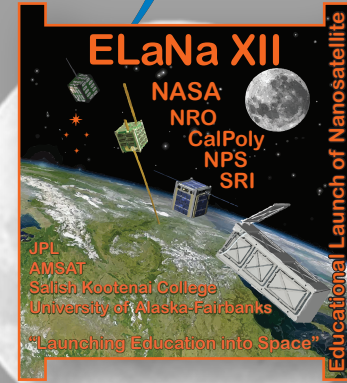
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# Upcoming ELaNa Launches



## NASA CubeSat Missions scheduled for launch

- **ELaNa XII (NET Oct, 2015)**
  - » **AMSAT Fox-1 – Radio Amateur Satellite Corp**
  - » **BisonSat – Salish Kootenai College**
  - » **ARC-1 – University of Alaska, Fairbanks**
  - » **LMRST-Sat – JPL**
  
- **ELaNa VII (Oct 29, 2015)**
  - » **Argus – Saint Louis University**
  - » **PrintSat – Montana State University**
  
- **ELaNa IX (Dec 3, 2015)**
  - » **STMSat-1 – St. Thomas More Cathedral School**
  - » **MinXSS (HiLite) – University of Colorado, Boulder**
  - » **CADRE – University of Michigan**





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# Upcoming ELaNa Launches (cont.)



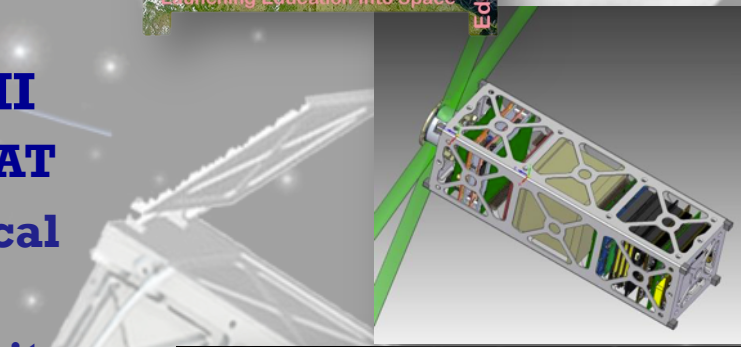
## NASA CubeSat Missions scheduled for launch (cont.)

- ELaNa XIII (NET Dec, 2015) – Falcon 9
  - » ISARA – JPL
  - » E. Coli AntiMicrobialSat – ARC
  
- ELaNa XIV (NET Nov, 2016) – Delta II
  - » RadFx – Vanderbilt University/AMSAT
  - » EagleSat - Embry-Riddle Aeronautical University
  - » Golden Eagle-1 - Marquette University
  - » MiRaTa – MIT Lincoln Laboratory
  - » Buccaneer - NRO

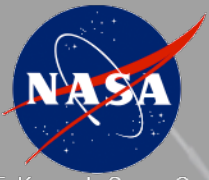
- *Many more in the works!*



Educational Launch of Nanosatellite







# ELaNa and CSLI Score Card



<b>CubeSat Launch Initiative Missions</b>				
<b>Selected</b>	<b>Awaiting Manifest</b>	<b>Manifested</b>	<b>Launched</b>	<b>ELaNa Missions Launched</b>
106	54	15	38	9

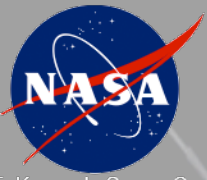
<b>Total U-Class Payloads (Cubes) Readiness</b>			
<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
15	28	10	1

## CSLI Announcement of Flight Opportunity 2015

**Release Date:** ~August 7, 2015

**Response Date:** November 24, 2015





# CubeSat Missions Manifest

(NASA Internal Only)



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LV Provider	FY 2015	FY 2016	FY 2017	FY 2018				
<b>NASA</b> 		 MarCO 3/4/16 InSight (AV) 2/2*	 ELaNa XIV 11/15/16 JPSS-1 (DII) 3/3*	 ELaNa NLT Apr 2018 VCLS TBD*				
<b>NASA ISS</b> 	 ELaNa IX 11/19/15 (U/R) ORB-4 NR/3*	 ELaNa 12/5/15 (U/R) SX-9 NR/1*	 ELaNa 2/13/16 (U/R) SX-10 NR/1*	 ELaNa 3/30/16 (U/R) ORB-5 NR/3*	 ELaNa 6/2/16 (U/R) SX-11 NR/TBD	 ELaNa 6/30/16 (U/R) ORB-6 NR/TBD	 ELaNa 8/24/16 (U/R) SX-12 NR/TBD	 ELaNa 10/4/16 (U/R) ORB-7 NR/TBD
<b>NRO</b> 	 ELaNa XII 9/25/15 NROL-55 (AV) 2/4*							
<b>ORS/STP</b> 	 ELaNa VII Oct 29, 2015 ORS-4 (SS) 1/2*		 ELaNa 9/15/16 STP-2 TBD/TBD					
<b>Commercial</b>	 ELaNa XIII Dec 2015 FORMOSAT-5 N/A/2*		 ELaNa 2016/2017					

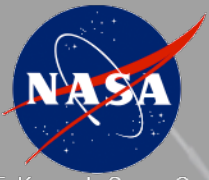
SPL Manifested  
 ELaNa Manifested  
 In Work

July 2015

\* # Dispensers/# CubeSats

Launched	Manifested	Un-Assigned
38	21	57



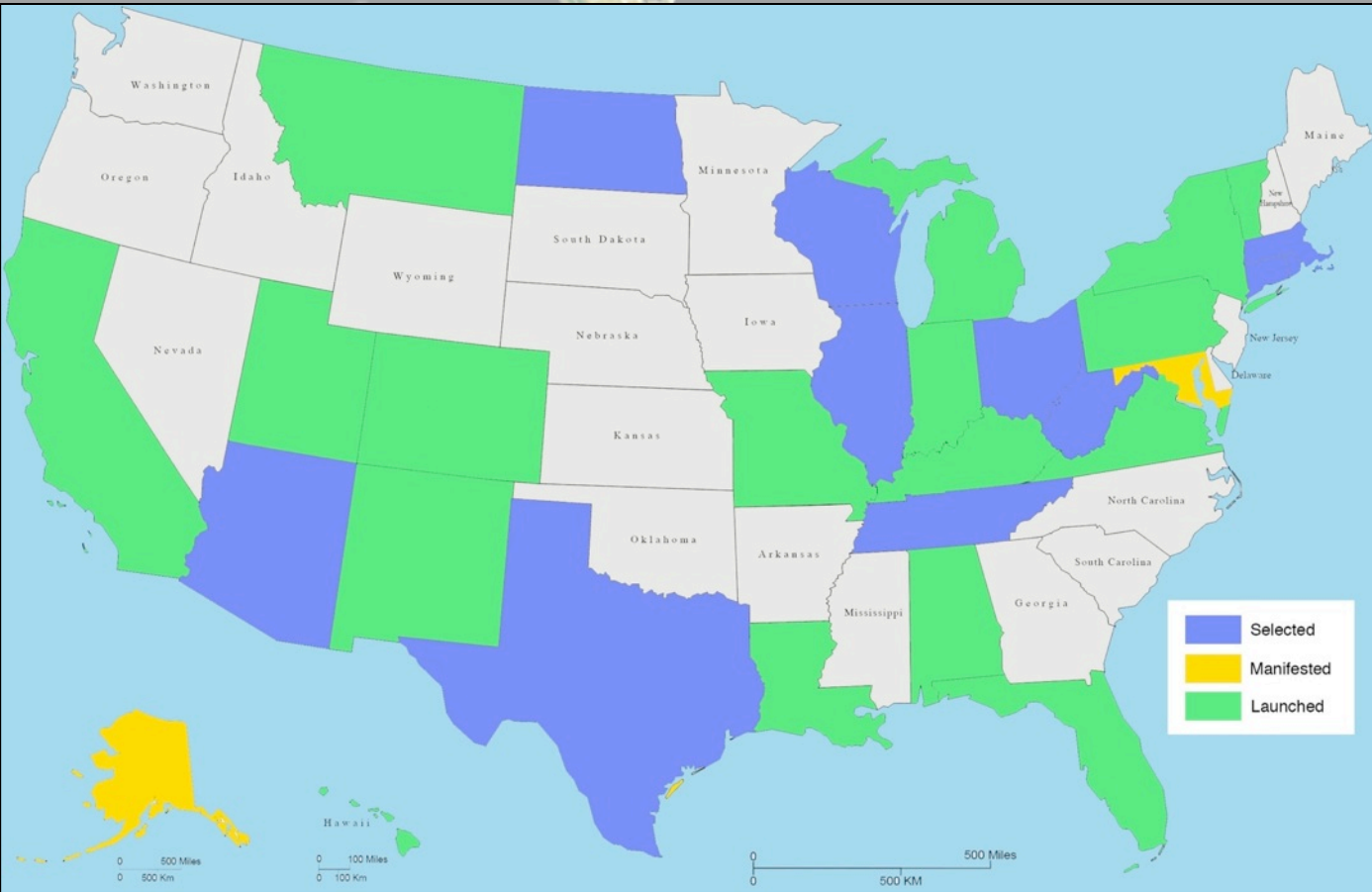


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# White House Maker Initiative



**Goal to broaden NASA's CubeSat Launch Initiative to reach all states by targeting the 20 "rookie states" that have had no previous presence in space.**



**Previous CubeSat Launch Initiative selectees are encouraged to partner with and/or mentor organizations from these states.**

***“will leverage the existing NASA Space Grant network of colleges and universities.”***

**~ White House Maker Faire Fact Sheet**



# Developing the Tool Box



**There is a significant amount of overhead to integrate a UCP/CubeSat on a Government mission, including Launch Services Provider, OCE, SMA, Primary Mission, added requirements and reviews**

## **- Commercial Brokers**

- Work with the Commercial broker to secure launches for small payloads as primaries or secondaries**
- First request for Commercial Broker's proposals are in review for an award this FY**

## **- FAA Small Launch Services**

- Venture Class Launch Services are underway to procure a launch service to deliver up to 60kg of CubeSats to Orbit by April 2018**



# It's time to send CubeSats Interplanetary! Mars Cube One (MarCO)

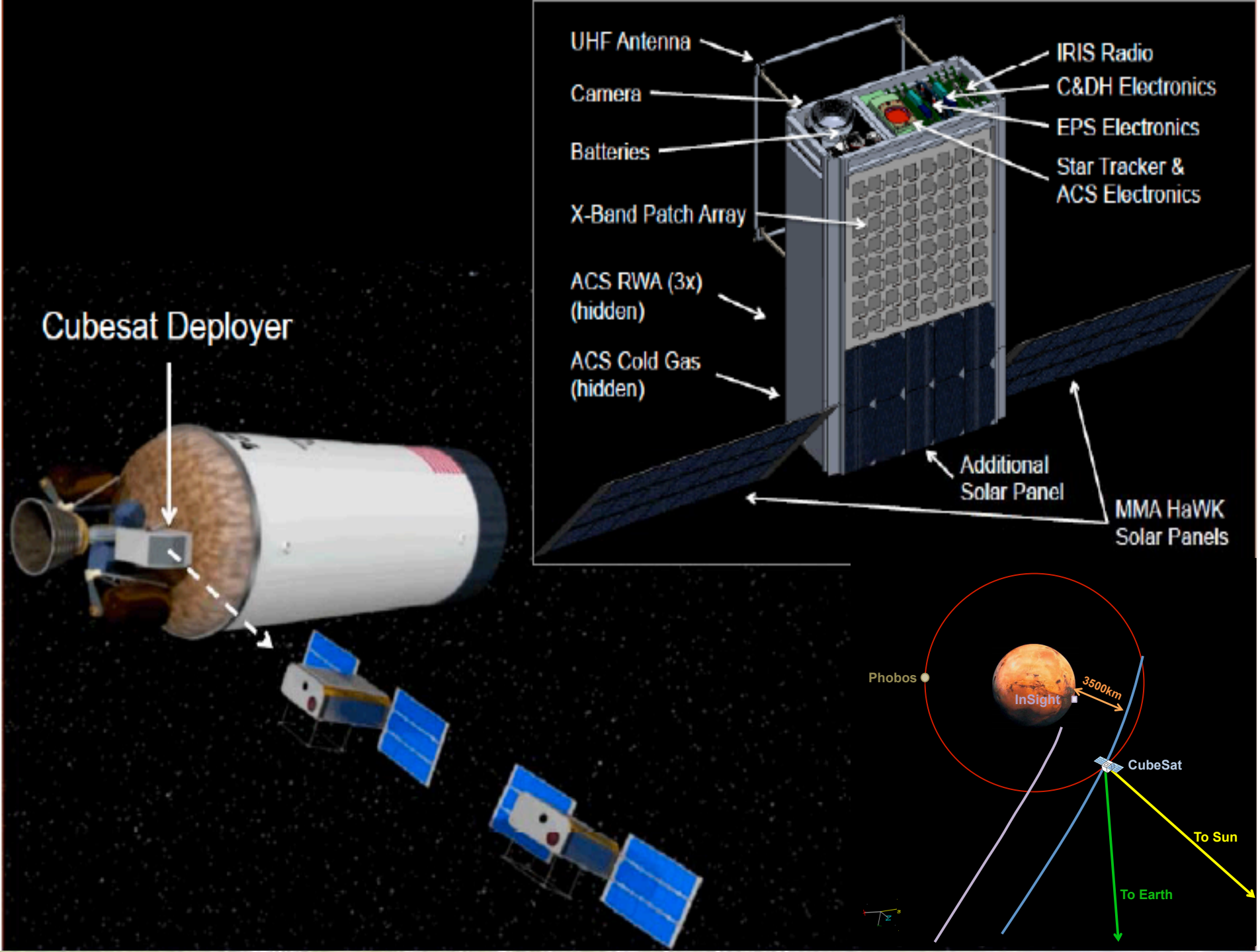
JPL designing and  
building MarCo...

X-band

UHF

...LSP will be  
launching MarCO with  
InSight on an Atlas V









# Path Forward



## So what is our Path Forward?

- **Continue to perform feasibility studies to support the launching of UCP**
  - **New Atlas ABC Adapter for MarCO to fly two 6U UCP, with no need for the NPSCulite System, reducing effort and cost**
- **Focus on securing ISS and Commercial UCP LEO launches**
  - **Contract in place where NASA can procure ISS UCP deployment slots from the ISS through NanoRacks**
  - **Working to execute a contract for a Commercial Launch Broker (CLB) to provide launch services for UCP**
    - » **CLB will be required to provide the launch service and integration of the UPC**
    - » **Expect to have contract in place by the end of FY15**
- **Launch UCP on a dedicated Small Launch Vehicle for those missions with unique orbital requirements**

