**Future Work**

The future of CubeSats within NASA is very promising. This is evident by the agency’s 2015 budget estimate that indicates a twenty five million dollar allocation to CubeSat projects over the next five years [1]. Because of this budget, there are currently multiple solicitations open that are accepting CubeSat based proposals. Three such solicitations can be seen in Table 1. All of these opportunities were found on the *NSPIRES* website.

In addition to that twenty five million, NASA Earth Science Technology Office (ESTO) funds missions to validate technology through its In-Space Validation of Earth Science Technologies (InVEST) program. Currently InVEST is planning to spend thirteen million over four years on four 3U CubeSat missions [2]. One mission currently in development is ICECUBE or Earth-1, which is being built at Goddard Space Flight Center.

Table 1: CubeSat Proposal Opportunities

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| --- | --- |
| **CubeSat Proposal Opportunities** | |
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| Name | Description |
| Remote Sensing Theory for  Earth Science | Remote sensing science to establish a theoretical basis for measuring Earth surface properties using reflected, emitted, and scattered electromagnetic radiation and to develop the methodologies and technical approaches to analyze and interpret such measurements lies at the heart of NASA’s mission. |
| Heliophysics Technology and  Instrument Development for Science | The H-TIDeS program solicits proposals for investigations that are relevant to NASA's programs in Heliophysics |
| Astrophysics Research and Analysis  Program | The Astrophysics Research and Analysis Program (APRA) program solicits basic research proposals for investigations that are relevant to NASA's programs in astronomy and astrophysics and includes research over the entire range of photons, gravitational waves, and particle astrophysics. |

Aside from the current funding opportunities, NASA is also developing a CubeSat based Centennial Challenge designed to spur the advancement of propulsion and communication technologies for deep space applications. Mainly the challenge is designed to develop innovative ways to return error free data from deep space without government assistance, and to demonstrate lunar orbital plane change from equatorial to polar [3]. This Centennial challenge will inevitably lead to technology and knowledge that will advance the field beyond its current state. For NASA to hold an event like this shows their interest and commitment to the field.

Ultimately this is an advantageous time to being working with CubeSats. NASA is showing a great commitment to the use of CubeSats for scientific applications. They are doing so through large research funding opportunities. They are also showing a great commitment by developing a CubeSat Centennial Challenge which will advance the field past its current state.

References:

[1] <http://www.nasa.gov/sites/default/files/files/NASA_2015_Budget_Estimates.pdf>

[2]

<http://mstl.atl.calpoly.edu/~bklofas/Presentations/DevelopersWorkshop2014/Klumpar_Enhanced_Role_for_CubeSats.pdf>

[3]

<https://www.fbo.gov/index?s=opportunity&mode=form&id=ec040a31b16194f877d1034ccefdda40&tab=core&_cview=0>