

ISSAC/AgCam Student Roster 2002-2012

The International Space Station Agricultural Camera (ISSAC) (previously known as AgCam) was designed, built, and operated by students, faculty, and staff of the University of North Dakota. ISSAC was launched to the International Space Station via both the Space Shuttle Endeavour in November 2008, and the Japanese H-2 Transfer Vehicle in January 2011.

The ISSAC project had dual objectives of both enhancing education and collecting science imagery. From its perch within the Window Observational Research Facility (or WORF) onboard the ISS, during 2011-2012 the ISSAC camera collected over 30,000 images from around the world, concentrating on North Dakota and a surrounding 6-state region known as the Upper Midwest Aerospace Consortium (UMAC) to provide multi-spectral imagery to farmers, ranchers, and other end users of the region. During its development and operations, over 80 students from 11 departments gained valuable experienced-based education through their participation. Many faculty and staff also contributed their time and energy to the project over the years, in particular George Seielstad (ESSP), Doug Olsen (ESSP), William Semke (ME), and Richard Schultz (EE).

Graduate Student Theses

Giesinger, Brian, "Design of an imaging system for AgCam – the International Space Station based Earth observing camera for precision agriculture", Electrical Engineering (2002).

Webster, Adam, "Analysis and development of a vibration isolation system for the agricultural camera (AgCam) remote sensing camera system", Mechanical Engineering (2003).

Hulst, Nicholas, "Near-real-time data processing and operation of an Earth-observing remote sensing payload", Electrical Engineering (2004).

Hammes, Jeffrey, "Substructure coupling for motion profile tuning for the Agricultural Camera (AgCam) remote sensing camera system", Mechanical Engineering (2004).

Frey, Christopher, "Mission planning, operation, and simulation for a space imaging system", Electrical Engineering (2004).

Scilley, Benjamin, "A real-time telemetry and commanding interface for an International Space Station imaging payload", Electrical Engineering (2004).

Wambsganss, Warren, "Electronics design and test strategies for an International Space Station remote sensing payload", Electrical Engineering (2005).

Voeller, Richard, "Closed cell foam characterization for packaging and testing of the Agricultural Camera (AgCam) system, Mechanical Engineering (2005).

Watson, Emily, "Building reliable ground operations", Space Studies (2006).

Zeller, Austin, "The analysis and design of a single-axis precision pointing control subsystem for the AgCam remote sensing camera system", Mechanical Engineering (2007).

Patchong, Doline. F. N., "Evaluating the benefits of software engineering principles in mission critical environments", Computer Science (2008).

Graduate Student Independent Study Reports

Barton, Jay, "Critical analysis of the NASA payload safety and payload integration processes", Space Studies (2004).

Threinen, G. Scott, "Analysis and development of a linear positioning system for the Agricultural Camera remote sensing camera system", Mechanical Engineering (2004).

Dunnigan, Adam, "Design, analysis, and NASA requirements for the alternate Agricultural Camera (AgCam) IMAX mounting assembly", Mechanical Engineering (2007).

Chennamaneni, Bhanu, "Application of software engineering principles for mission critical software", Computer Science, (2012).

ISSAC/AgCam Undergraduate or Graduate Student Contributors

Console Operators

Arangala, Miyuru; CS
Arbuckle, Scott; Avit
Benson, Christopher; GS
Brockman, Phil; Math
Butz, David; Avit
Chachula, Kristopher; Avit
Chennamaneni, Bhanu; CS
Grygier, Mark; Avit
Holman, Michael; EE
Huff, Teleana; Phy
Nervold, Anders; Ent
Root, Noah; EE
Schilling, Ben; Avit
Shroeder, Kyle; Avit
Sundal, Charles; Avit
Thomas, Michael; Avit
Zack, Beth, SpSt

Design/Ops/Data Support

Balu, Balaji; CS
Bodien, Eero; EE
Brandvold, Reed; EE

Buisker, Matt; ME
Carpenter, Jon; ME
Chatterjee, Amrita; CS
Chwialkowski, Emily; SpSt
Dibroca, Thibault; EE (ForEx)
Ditteon, Paula; EE
Dou, Changyong; ESSP (ForEx)
Durbin, Chris; EE
Dziesinski, Lucas; Avit
Erickson, Chris; ME
Fisher, Andrea; EE
Fore, Seth; ESSP
Jaszowski, James; EE
Gunaratne, Thanuja; EE
Hofrichter, Eric; EE
Hu, Lianbo; ESSP (ForEx)
Kerien, Joe; CS
Kharel, Gehendra; ESSP
Kholgade, Sudhanwa; EE
Knudson, Michael; ESSP
Kunzi, Fabrice; ME
Lemons, Rebecca; ESSP
Lendway, Matt; EE
Lindfors, Scott; ME

Lovseth, Barry; EE
Masterson, Evan; Avit
Mazumder, Narayana; CS
McCloughlin, Alexandria; SpSt
Molodtsova, Sergey; ESSP
Molodtsova, Tatiana; ESSP
Murrow, Matt; ME
Nemitchenko, Tetiana; ESSP
Nelson, Alexander; ME
Nelson, Shannon; Ed (REU)
New, Cherie; ESSP
Nuerburg, Jeremy; EE
Overmoe, Kate; ESSP
Rindt, Amanda; CS
Schlager, Chad; EE
Senti, Jason, EE; (REU)
Shehan, Larry, EE; (REU)
Smith, Guy; EE
Speidel, Tyler; EE
Stegmiller, Scott; ME
Trboyevich, Jessica; EE
Ubbi, Paul; Mgmt
Walters, Darin; Ed (REU)
Wu, Jiexia; ESSP
Zhou, Qiang; ESSP