



# Burning And Suppression of Solids (BASS)



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## Objective:

- BASS will bridge the gap between normal gravity NASA-STD-6001 Test # 1 method, ground based microgravity tests, and actual material flammability in microgravity.
- BASS will assess the effectiveness of an inert, gaseous extinguishing agent (similar to that used on ISS) in putting out flames over different materials, geometries, and flow.

## Relevance/Impact:

- Drop tower test results show that the reduced convection in 0g may increase the flammability of materials, allowing them to burn in lower oxygen environments than in 1g. These results strongly suggest that materials that pass a 1g flammability test may be flammable under the same conditions in 0g with spacecraft ventilation flow.
- Practical, realistic fuels in typical geometries will be examined, including difficult to extinguish wake flames which are shielded from direct extinguishment.

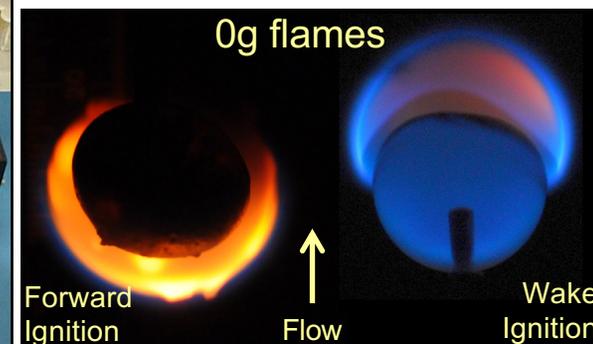
## Development Approach:

- BASS was launched on Shuttle flight ULF-5 and began operation during Increment 31-32 on board ISS in the Microgravity Science Glovebox facility.
- BASS utilizes the on orbit hardware SPICE which was launched on STS-126.
- BASS hardware includes modifications to SPICE so that solid fuel samples can be studied.
- Crew required to set up and operate the experiment. Video and data down-linked to the ground for evaluation.



SPICE/BASS Experiment Assembly

Glenn Research Center



## ISS Resource Requirements

<b>Accommodation (carrier)</b>	Microgravity Science Glovebox
<b>Upmass (kg)</b> (w/o packing factor)	12
<b>Volume (m<sup>3</sup>)</b> (w/o packing factor)	0.096
<b>Power (kw)</b> (peak)	0.05
<b>Crew Time (hrs)</b> (installation/operations)	40 hours crew time
<b>Autonomous Ops (hrs)</b>	N/A (all hands on crew ops)
<b>Launch/Increment</b>	ULF-5/Inc 26

## Project Life Cycle Schedule

Milestones	CDR	SR/DR	Fit Safety	FHA	Launch	Ops	Return	Final Report
<b>Actual/ Baseline</b>	8/1999	4/2010	5/2010	6/2010	2/2011	Inc. 31/32+35/36	OPS + 4 m	Return +12m