

## FORCE

Facility for Open Research  
in a Compressed Environment

# FORCE details & dates

## \$13.7 million NSF grant for world-leading research at ASU

In September 2021, the National Science Foundation's Mid-Scale Research Infrastructure 1 (RI-1) program awarded ASU a \$13.7 million grant to establish a national user facility for high-pressure research at ASU. FORCE will serve a broad range of disciplines including geological sciences, mineral physics, materials science, quantum materials, and chemistry.

**PI:** Kurt Leinenweber | SMS, Eyring Materials Center

**Co-Is:** Alexandra Navrotsky | SMS, SEMTE, SESE

Thomas Sharp | SESE

Dan (Sang-Heon) Shim | SESE

David J. Smith | Physics

### FORCE is unique

FORCE brings together a unique set of experimental capabilities that are unavailable anywhere else in the world.

The press hall will feature four major pieces of equipment:

- **6000 ton Kawai-type multi-anvil press "Ichiban"** – the only of its kind outside of Japan, this press will allow for ultra-large sample volumes synthesized up to 25 GPa
- **1500 ton DIA cubic-type multi-anvil press "Jasmine"** – using sintered diamond anvils, large-volume samples can be synthesized up to 100 GPa
- **500 ton torsional press "Twister"** – this press will be used to study material behavior and phase transitions caused by strain up to 6 GPa
- **Internally-heated pressure vessel (IHPV)** – this gas apparatus will condition samples up to 0.6 GPa for studies of planetary crust and upper mantle and for use as starting materials in the presses

### Construction Timeline

*Dates for equipment are estimates for completion of testing & certification*

- 05/11/2023 FORCE Lab Construction Begins
- 09/14/2023 Twister Installation
- 11/17/2023 Ichiban Installation
- 01/30/2024 IHPV Installation
- 08/14/2024 Jasmine Installation
- 10/01/2024 FORCE Lab Construction Complete



Learn more about FORCE at [force.asu.edu](https://force.asu.edu)



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### Questions?

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