

3rd generation synchrotron



ESRF (1994)



APS (1996)

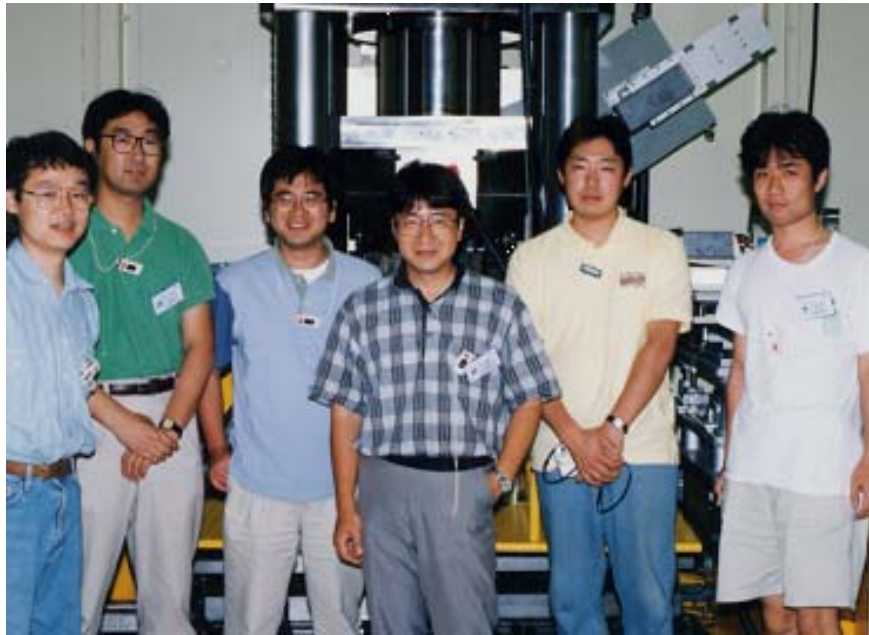


SPring-8 (1997)

Late 90s at APS



Late 90s at SPring-8



JSPS Gakujutsu-sousei research project

“Synchrotron high-pressure mineral physics”

April 2003-March 2008; (~4 million\$) to T. Irifune@GRC, Ehime U.

Collaborators: T. Inoue, H. Ohfuji, N. Nishiyama, T. Shinmei, Y. Higo, Y. Tange
T. Kono, Y. Sueda, T. Sanehira, T. Kunimoto, T. & J. Tsuchiya

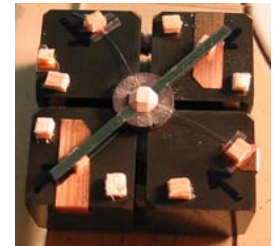
- 1) Ultrasonic measurements at P, T of the mantle transition region (~20GPa, 1800K)

- *chemical composition of MTR, fate of*
- *subducted slabs, absolute pressure scale*



- 2) High-pressure generation with SD anvils down to the mid lower mantle (~70 GPa, 2000K)

- *heterogeneity in upper LM, composition of LM*



- 3) Use of ultrahard nano-polycrystalline diamond (HIME-DIA)

- *spin and pv-ppv transitions in LM*
- *iron in the Earth's inner core*
- *deformation at very high pressure*
- *in situ neutron observations (Kagi, Okuchi, ...)*



Special volume of **High Pressure Research**

“ High-Pressure Mineral Physics and Materials Science with Synchrotron and Other Radiation Sources”

- To be published by September, 2008
- Manuscript submission deadline: **January 31, 2008**
- Send manuscripts to Yanbin Wang, wang@cars.uchicago.edu

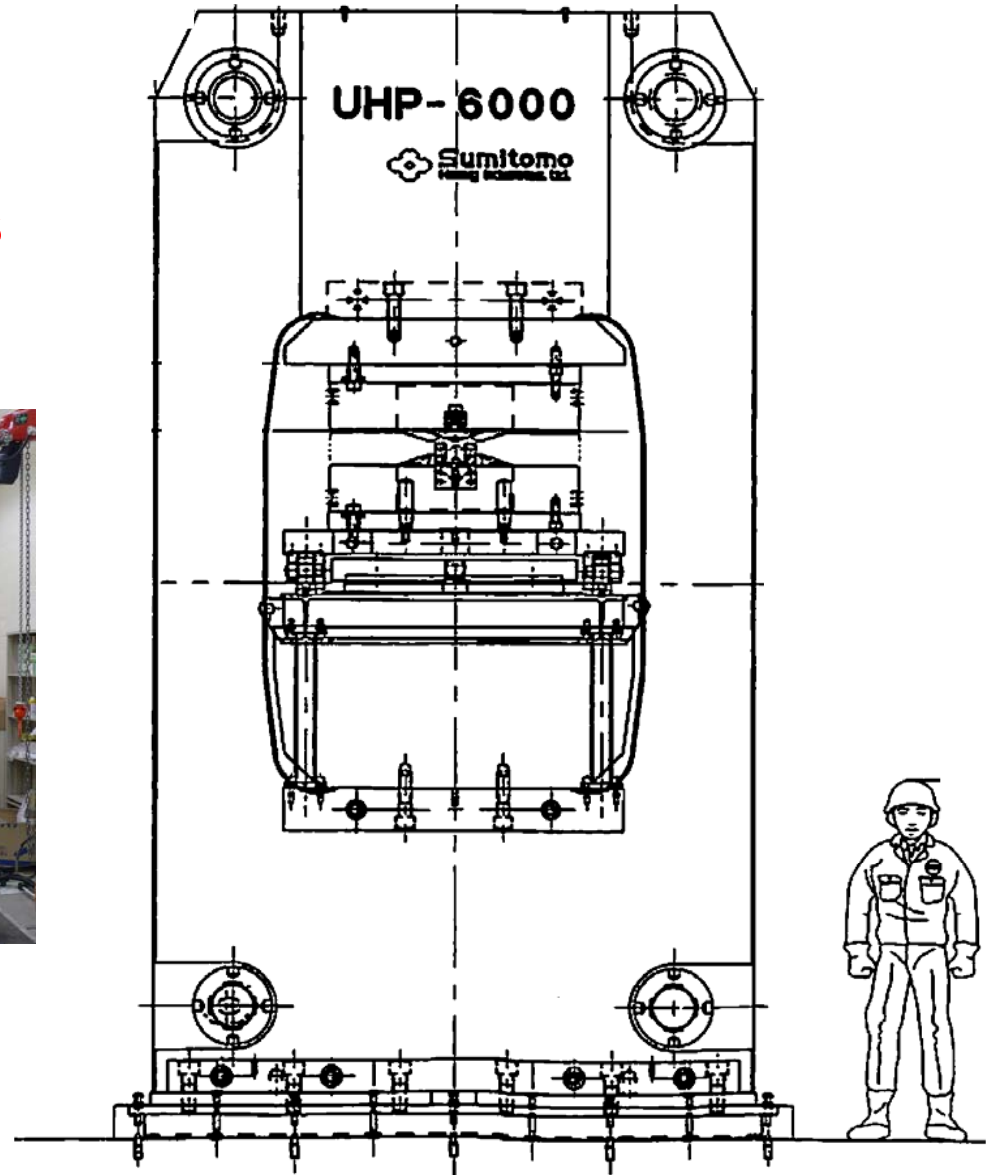
For further high pressure
generation, **deformation**,
larger HIME-DIA synthesis



"SPEED-MkII"
@SPring-8



"MADONNA"
@GRC



"BOTCHAN": coming soon
@GRC



Soseki Natsume
(1867-1916)

“botchan (young master)” is the title of a famous Japanese novel, describing people and life in Matsuyama in Meiji era.

MADONNA

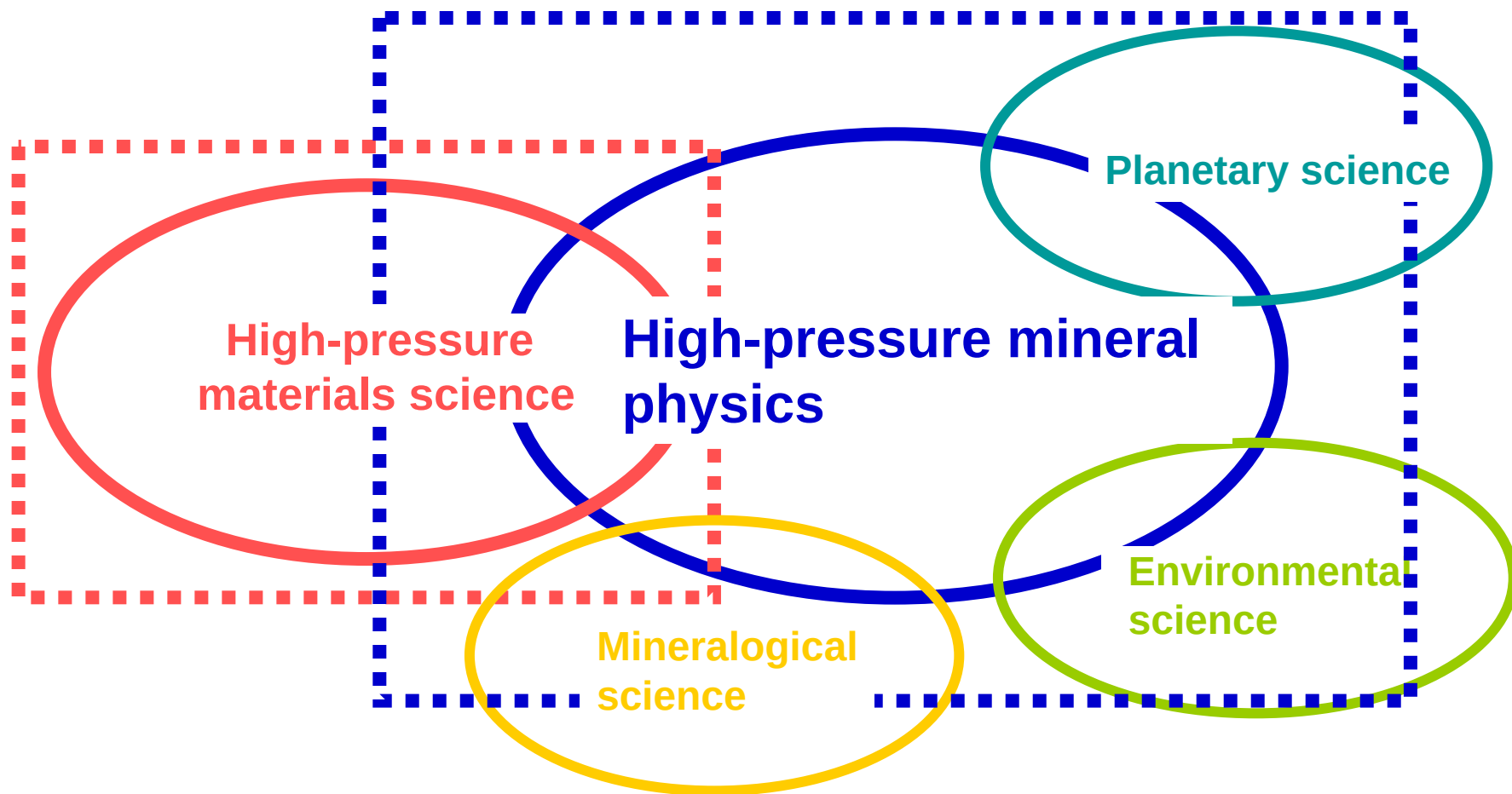


BOTCHAN



Earth and Planetary Science user group at SPring-8 (~90 members)

President	T. Irifune (GRC)
Vice President	K. Hirose (TiTech)
Secretarial	N. Sata (IFREE)
	D. Yamazaki (ISEI)
BL correspondence	K. Funakoshi (JASRI)



Relevant BL : BL01B1, 02B1 • B2, 04B1, 10XU, 14B1, 20B2, 22XU, 37XU, 43IR, 47XU, etc.