

# Four-Dimensional Digital Universe Viewer

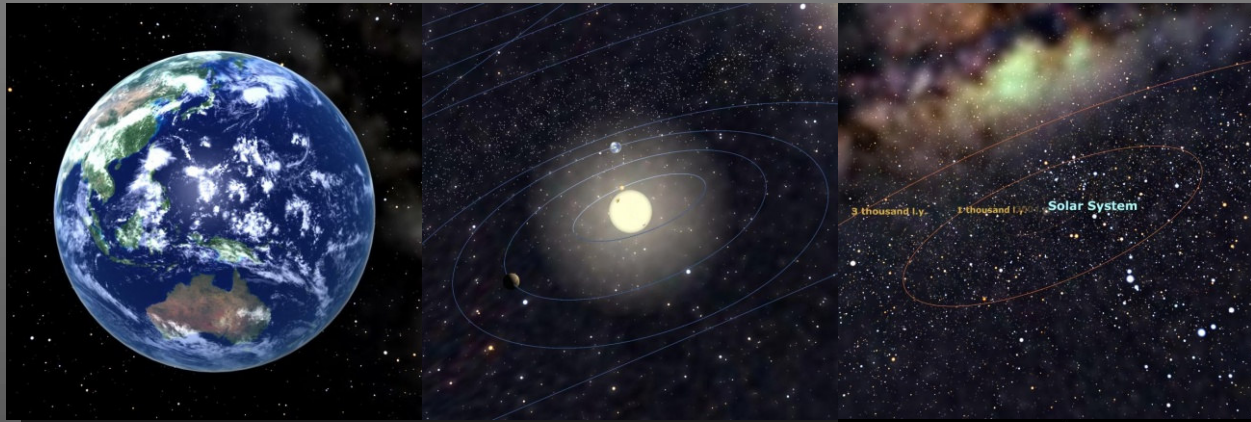
# Mitaka

National Astronomical Observatory of Japan  
4-Dimensional Digital Universe Project

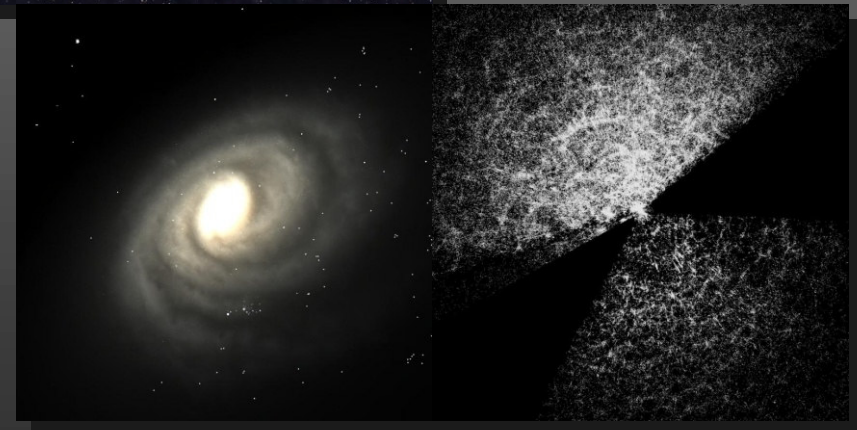
**Tsunehiko Kato (Osaka Univ. / NAOJ, Japan)**

4D2U

## Visualizing the known universe



- Up-to-date observational data
- Theoretical models
- Real-time software



Navigating across the universe **seamlessly**  
from **the Earth** to **the edges of the known universe.**

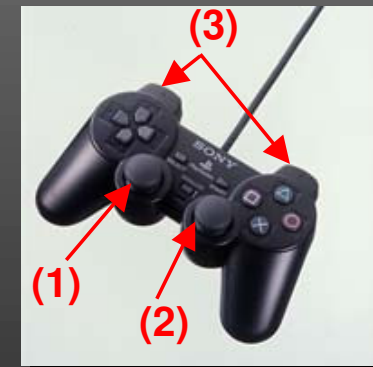
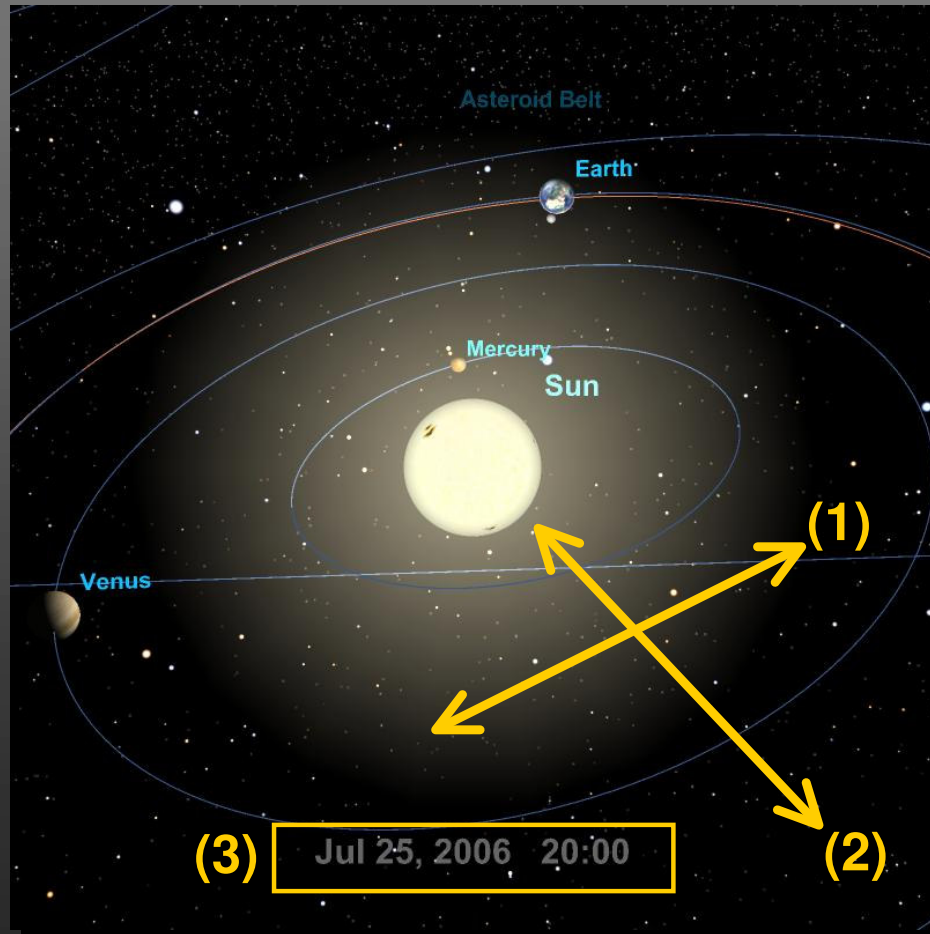
# Mitaka Demonstration

**A real-time demonstration of Mitaka  
from the Earth to the end of the observable universe...**

## Mitaka works on PCs

### Operation with:

- Keyboard
- Mouse
- Gamepad



Gamepad

1. Changing the viewpoint
2. Zooming in / zooming out
3. Changing the viewing time

# Mitaka is FREE SOFTWARE

Anyone can download it from our website free of charge.

**Mitaka**

4D2U  
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- Top
- Tutorial
- Space Mode
- Planetarium Mode
- Other Features
- Data Credits
- FAQ
- Revision History

Japanese

**News**

|               |  |
|---------------|--|
| Jul. 20, 2006 | Version 1.0 beta 5 was released. Check out <a href="#">the revision history</a> for details. |
| Oct. 13, 2005 | Version 1.0 beta 4 was released.   |
| Feb. 22, 2005 | Version 1.0 beta 3 was released.   |
| Feb. 16, 2005 | Version 1.0 beta 2 was released.   |
| Feb. 1, 2005  | Version 1.0 beta was released.   |

**What is Mitaka?**

Mitaka is software for visualizing theoretical, computational, and observational astronomical data, developed by the Four Dimensional Digital Universe (4D2U) project of the National Astronomical Observatory of Japan (NAOJ). Users can seamlessly navigate across the universe from Earth to the edges of the known universe.

Mitaka is optimized for 3D visualizations on multiple screens at the 4D2U theater in NAOJ's Mitaka headquarters. However, it can also be used on a single Windows PC.

Funding sources of the project are: "Construction of 4-Dimensional Digital Universe and Its Application to Research and Education" funded by Research and Development for Applying Advanced Computational Science and Technology of Japan Science and Technology Agency (ACT-JST: 2001-2004), and "Construction of an Image Distribution System for the 4-Dimensional Digital Universe" funded by the Special Coordination Fund for Promoting Science and Technology of the Japanese Ministry of Education, Culture, Sports, Science and Technology as part of their Program for the Effective Promotion of Joint Research with Industry, Academia and Government (2004-present).

**500,000 Downloads**  
(Feb. 2005 – May 2009)

Mitaka website: [http://4d2u.nao.ac.jp/html/program/mitaka/index\\_E](http://4d2u.nao.ac.jp/html/program/mitaka/index_E)

Or search for "Mitaka" on the web

Mitaka works on multiple PC systems as well.

## The Stereoscopic Dome Theater in NAOJ

- Dome screen
- 13 PCs
- 13 video projectors



Dome Building



Mitaka image projected on the dome screen

**We can see Mitaka visuals on stereoscopic domes**

**In Japan, Mitaka has been used in:**

- **Schools**
- **Scientific museums**
- **Public astronomical observatories**
- **Educational TV programs**
- **Books**

**as well as personal use**

**We hope this software will be used for educational purposes all over the world**

**Mitaka is real-time software for visualizing the known universe**

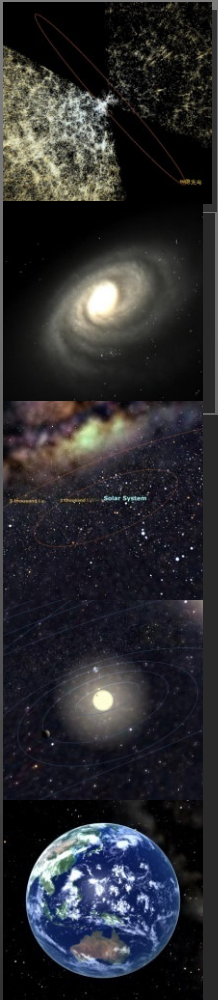
**with**

- **Up-to-date Observational Data**
- **Theoretical Models**

**Mitaka works on**

- **Single PCs**
- **Multiple PC systems**

**It can be downloaded **free of charge****







**Thank you very much for your attention**

**Mitaka website: [http://4d2u.nao.ac.jp/html/program/mitaka/index\\_E](http://4d2u.nao.ac.jp/html/program/mitaka/index_E)**