Subaru Visible AO

(next 10 year of Subaru AO)

NAOJ Subaru

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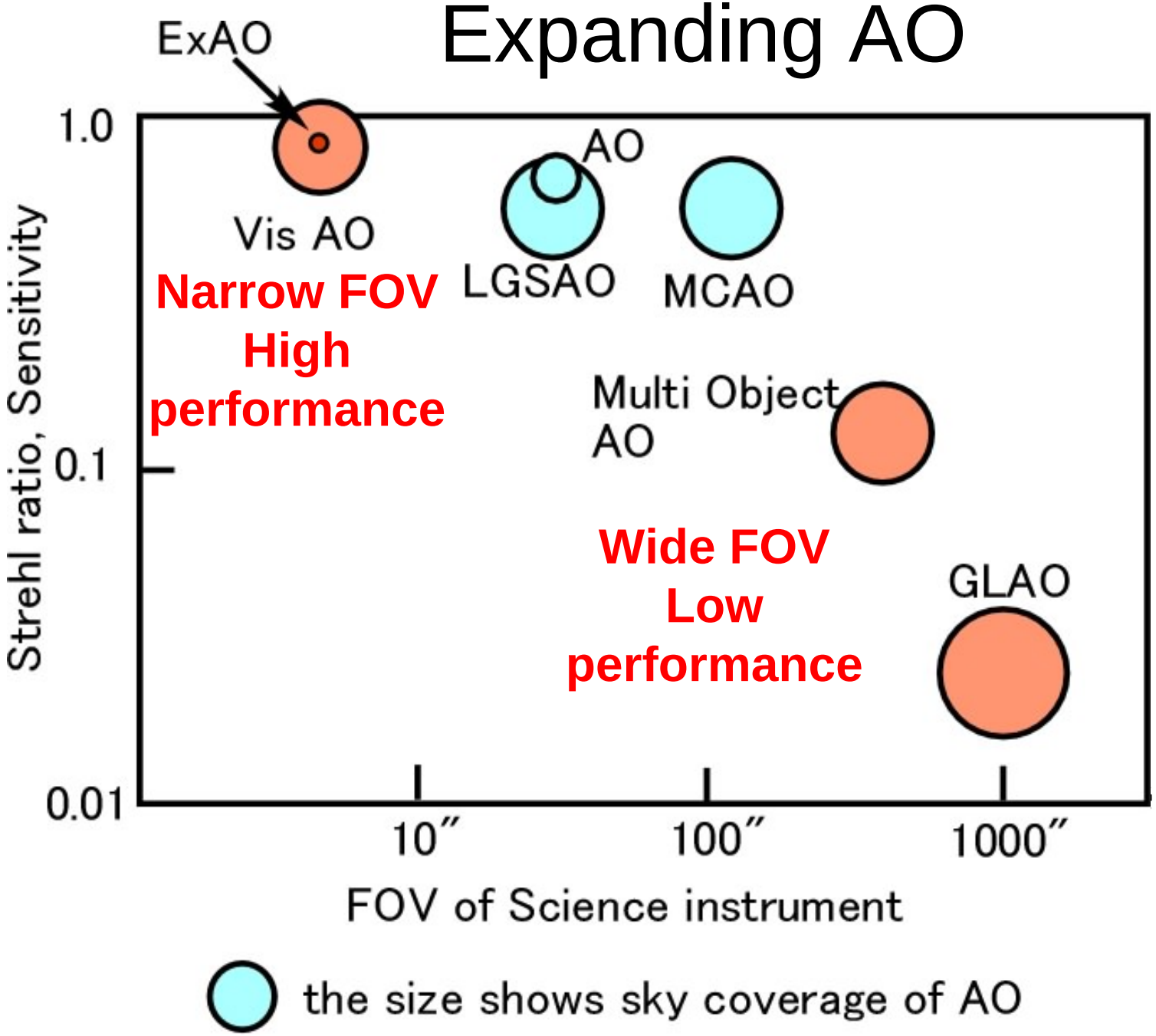
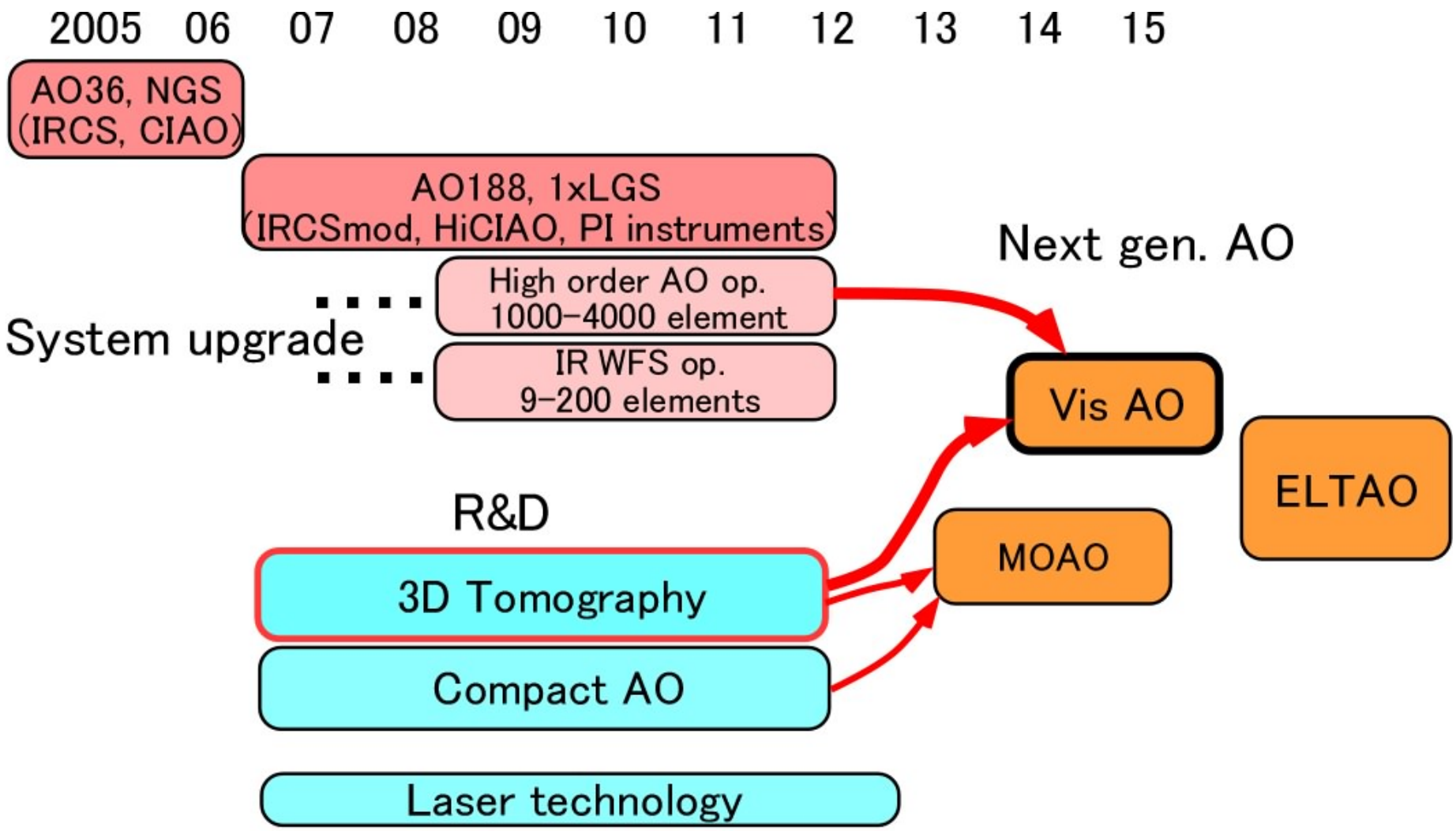
Expanding AO



SuprCan



Subaru AO road map

Visible AO

- **Spatial resolution: 0.015”**
- **SR: >50% at V (>90% at NIR)**
- **FOV: < 10” (narrow）**
- **Sky coverage: ～100%**

- **Very high spatial resolution at visible**

  Much higher than HST, JWST

  SR is high enough for accurate photometry

=> Complimentary to ELT NIR-AO, HST, JWST

- **Instruments: Multi-band Vis-NIR camera,**

  IFU spectrograph・・・

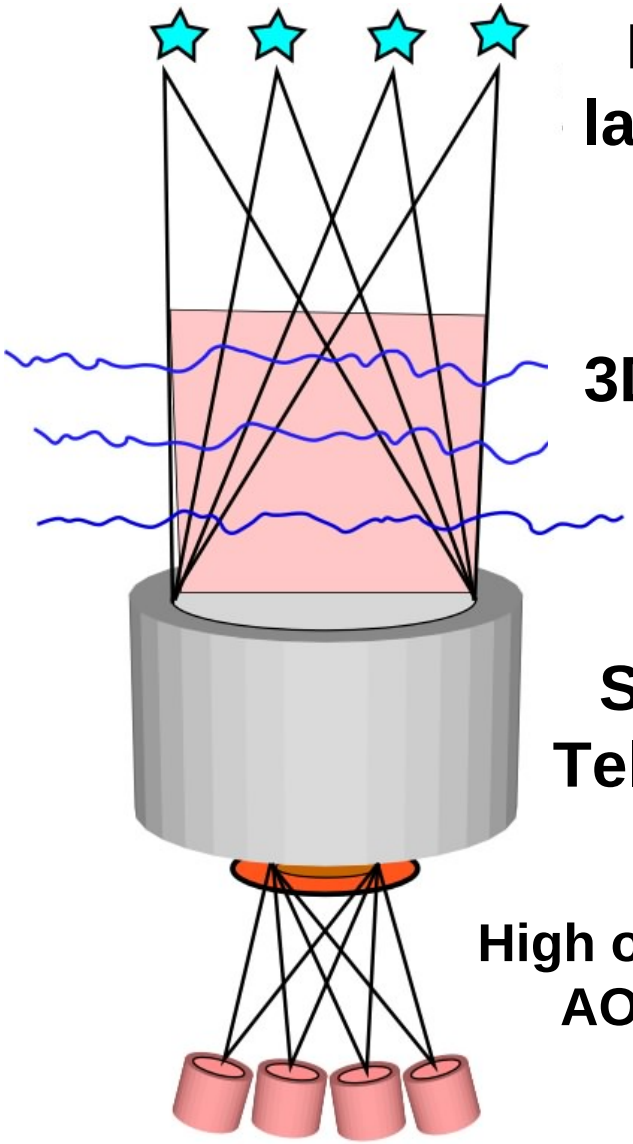
Science with visible AO

(Narrow FOV but High resolution)

- **Photometry & Spectrometry of individual stars in galaxies, external GCs**
- **Morphology of high z galaxies**
- **Star forming region**

  Binary stars mass function, direct imaging of rotation, silhouette disk

- **Planets around white dwarfs**
- **Solar system ·····**



Bright Multiple laser guide stars

High power laser

3D measurement of turbulence

Visible AO

Subaru Telescope

High order AO AO2000

Tomographic WFS

High order DM

High speed computer

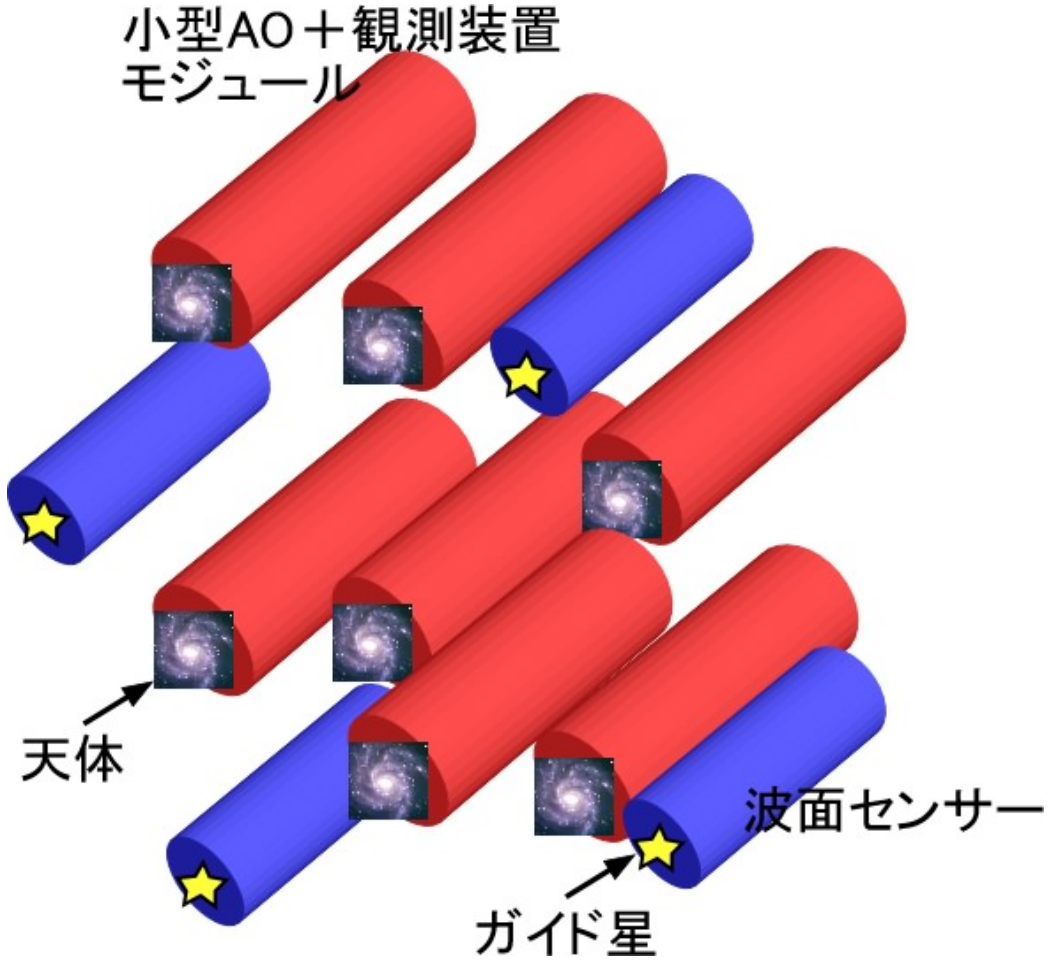
Subaru is suitable for visible AO

	Subaru	Keck	Gemini
Seeing	○	△-○	○
Mirror quality	○	△	○
Telescope vibration	○	△	△
Aperture size	△ (8m)	○ (10m)	△
Nasmyth Platform	○	○	x
Total	○	△	△

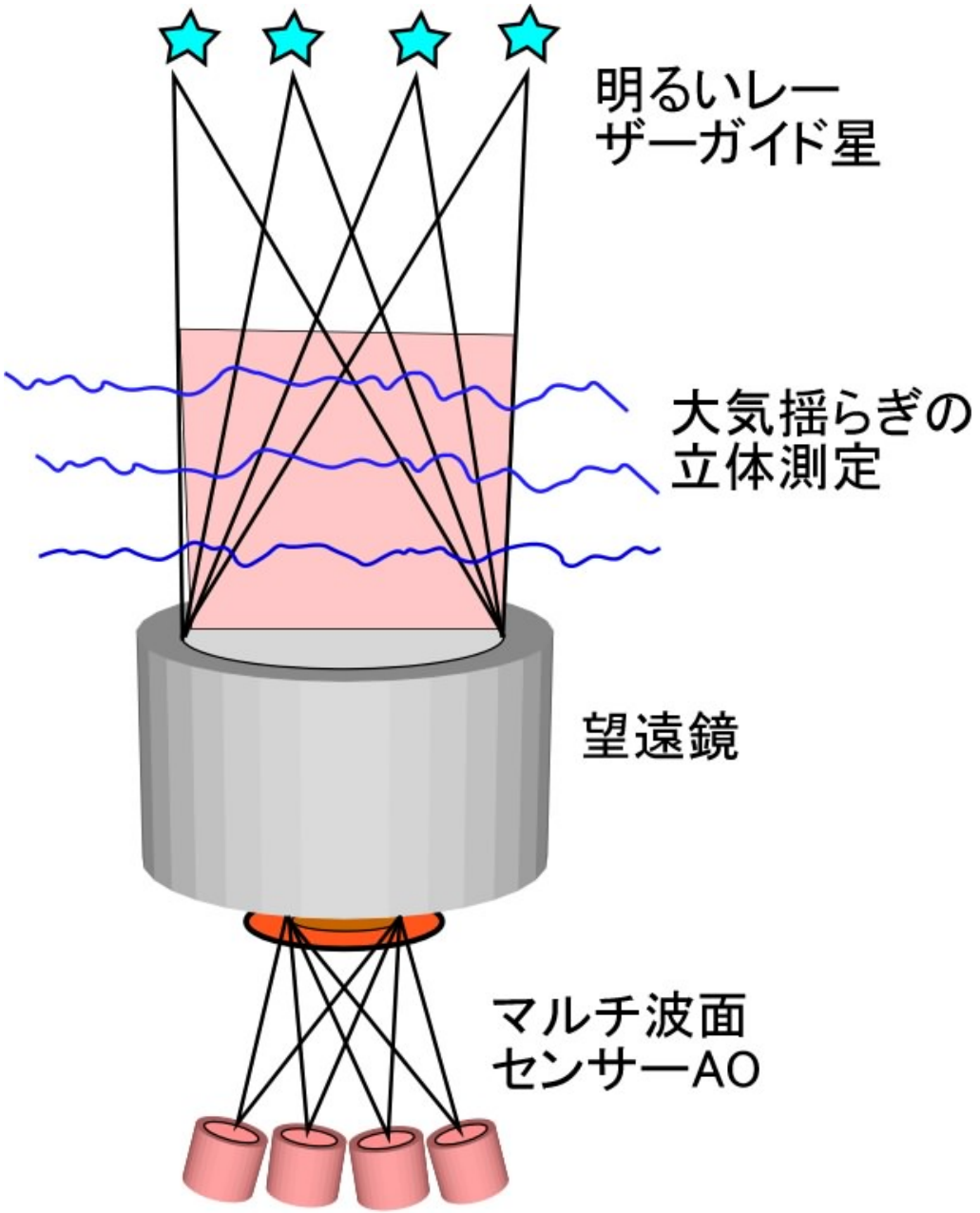
Summary

- **Visible AO is 10 year scale target　たたき台**
- **FWHM=0.015”, FOV<10” at V**
- **Resolve stars in galaxies, proper motion・・・・**
- **Complimentary to ELT, HST, JWST**
- **Subaru is suitable for Visible AO**
- **R&D:　Tomographic WFS, High power laser, MEMS-DM**

Let’s discuss science and technology



多天体AO



トモグラフィーAO

Technical Issues

- **Tomography**
- **Accurate wavefront sensing**
- **High order DM (MEMS?)**
- **High speed computation**
- **High power Laser**