

JASMINE のサイエンスと 位置天文サイエンスコアチームの 活動の現状報告

西山正吾 (宮城教育大)

郷田直輝, 矢野太平, 郡和範 (国立天文台),
松永典之(東京大), 川中宣太 (国立天文台/東京都立大),
河田大介 (University College London/国立天文台),
ほかJASMINEチーム一同

Introduction

JASMINE (Japanese Astrometry Satellite Mission for Infrared Exploration) **Science**

- **Precise astrometry → structure and formation history of the nuclear stellar disk (NSD) and our Galaxy**
- **Precise photometry → Exoplanet search (earth-like planets in habitable zone around M-dwarfs)**

Talks in this meeting

- **Science (astrometry): 西山正吾 (Miyagi U of Education) V230a**
- **Status: 鹿野良平 (NAOJ) V231a**
- **Photometry simulation: 笠木結 (ISAS/JAXA) V232a**
- **End-to-end simulation: Pau Ramos (NAOJ) R05a (3/17)**

Introduction

Astrometry science core team

**N. Matsunaga (Univ. Tokyo), N. Kawanaka (Tokyo Metropolitan Univ./NAOJ),
D. Kawata (UCL), N. Gouda, T. Yano, K. Kohri (NAOJ),
S. Nishiyama (Miyagi Univ. of Education)**

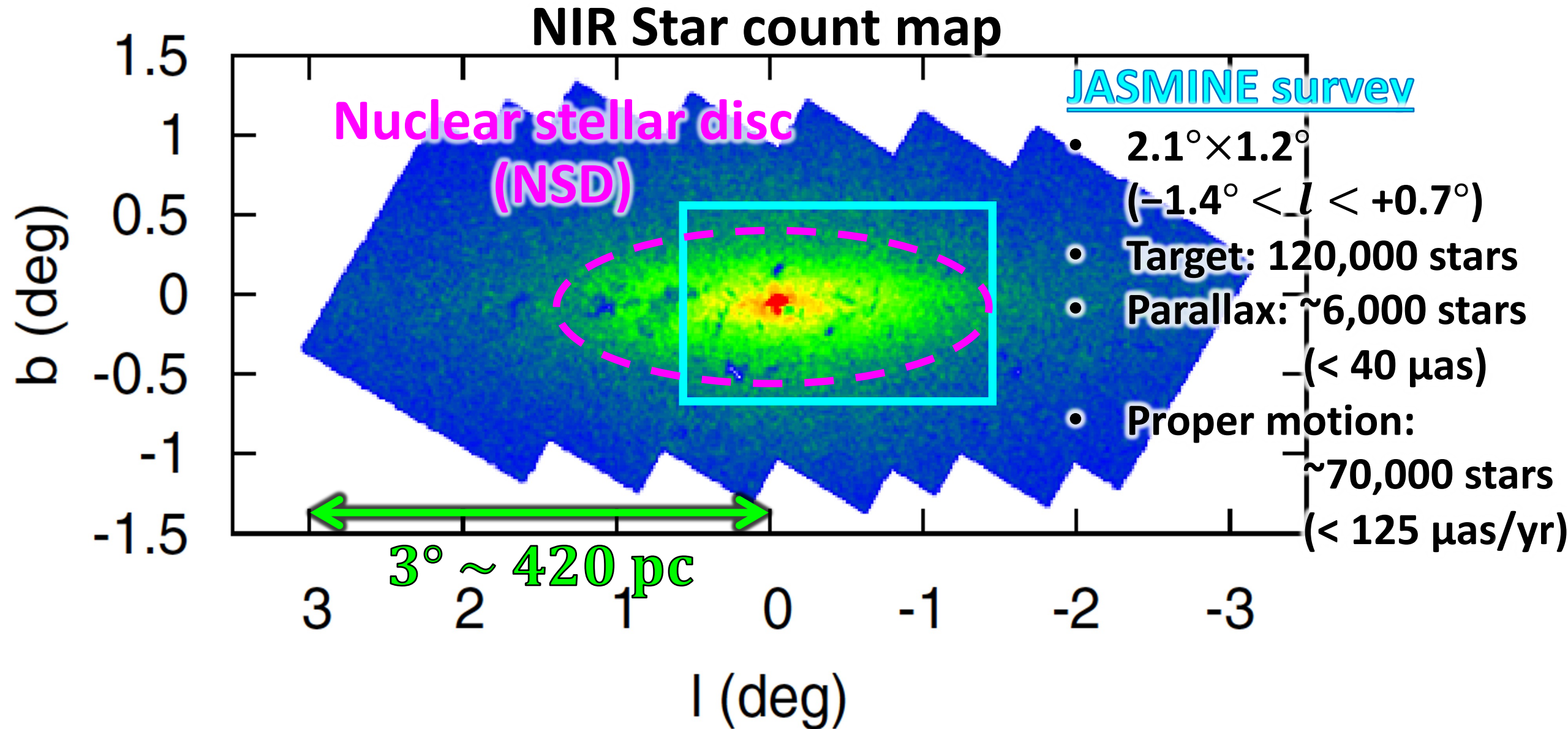
- **Detailed examination and expansion of science cases**
- **Collaboration with other projects**
- **Policies for data release, usage, publication**

Science cases

- **Formation history of nuclear stellar disk (NSD) and bar**
← **Follow-up astrometry of Mira found by PRIME**
- **Constraint on dark matter (WIMP)**
- **Astrometric studies of X-ray binaries**
- **Hidden stellar clusters/streams ...**

JASMINE GC survey, other surveys

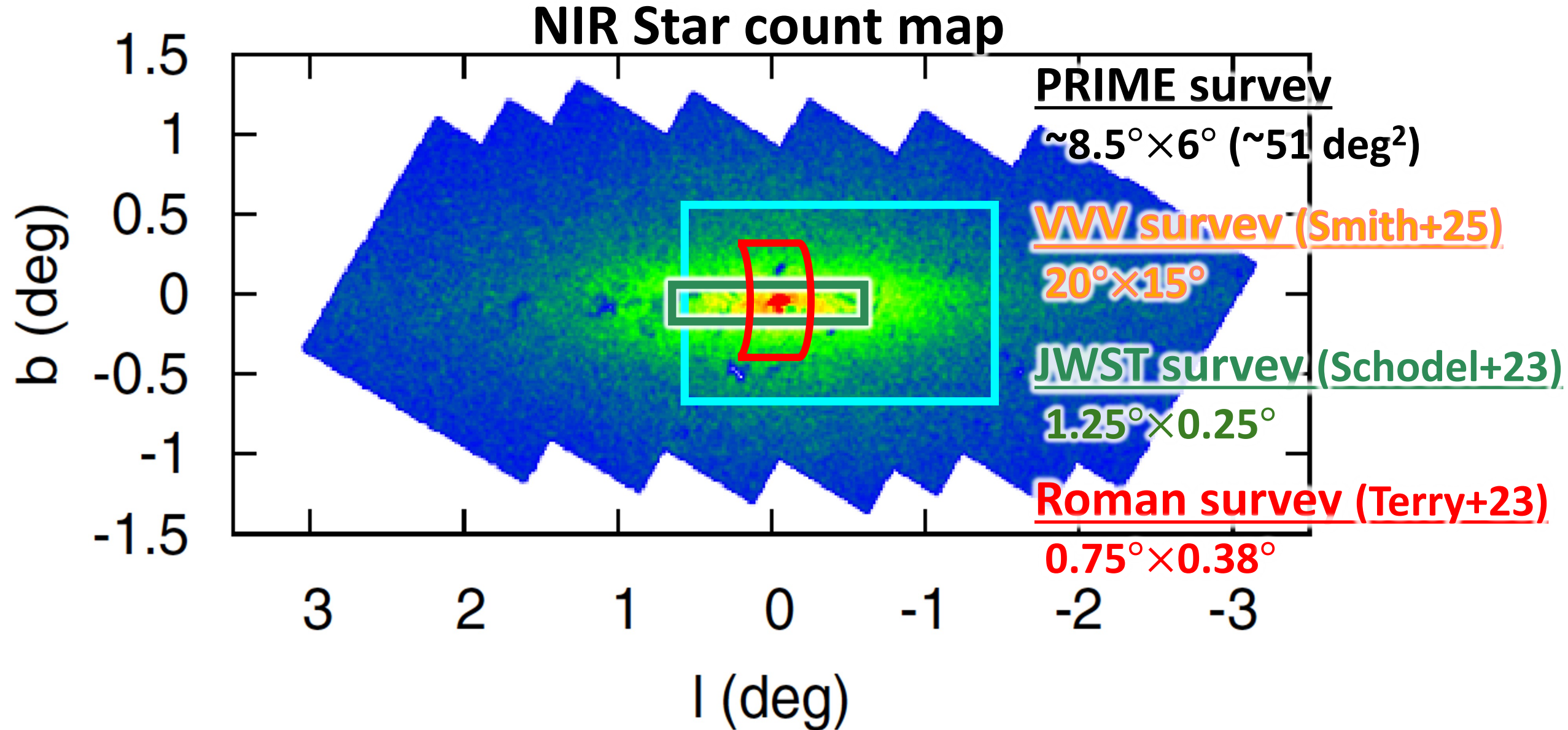
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(Nishiyama+ 13, Yasui+ 15, Bland-Hawthorn & Gerhard, 16, ARA&A)

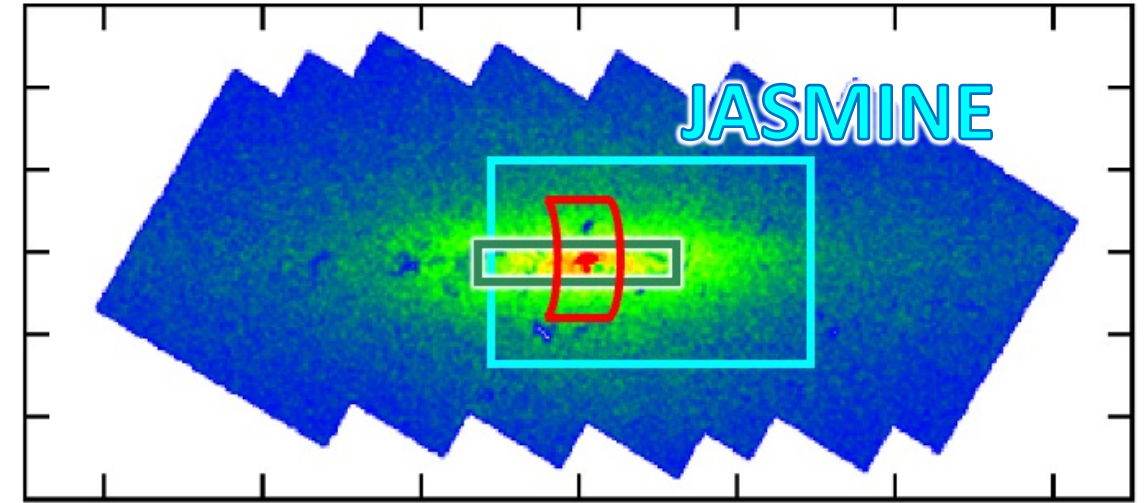
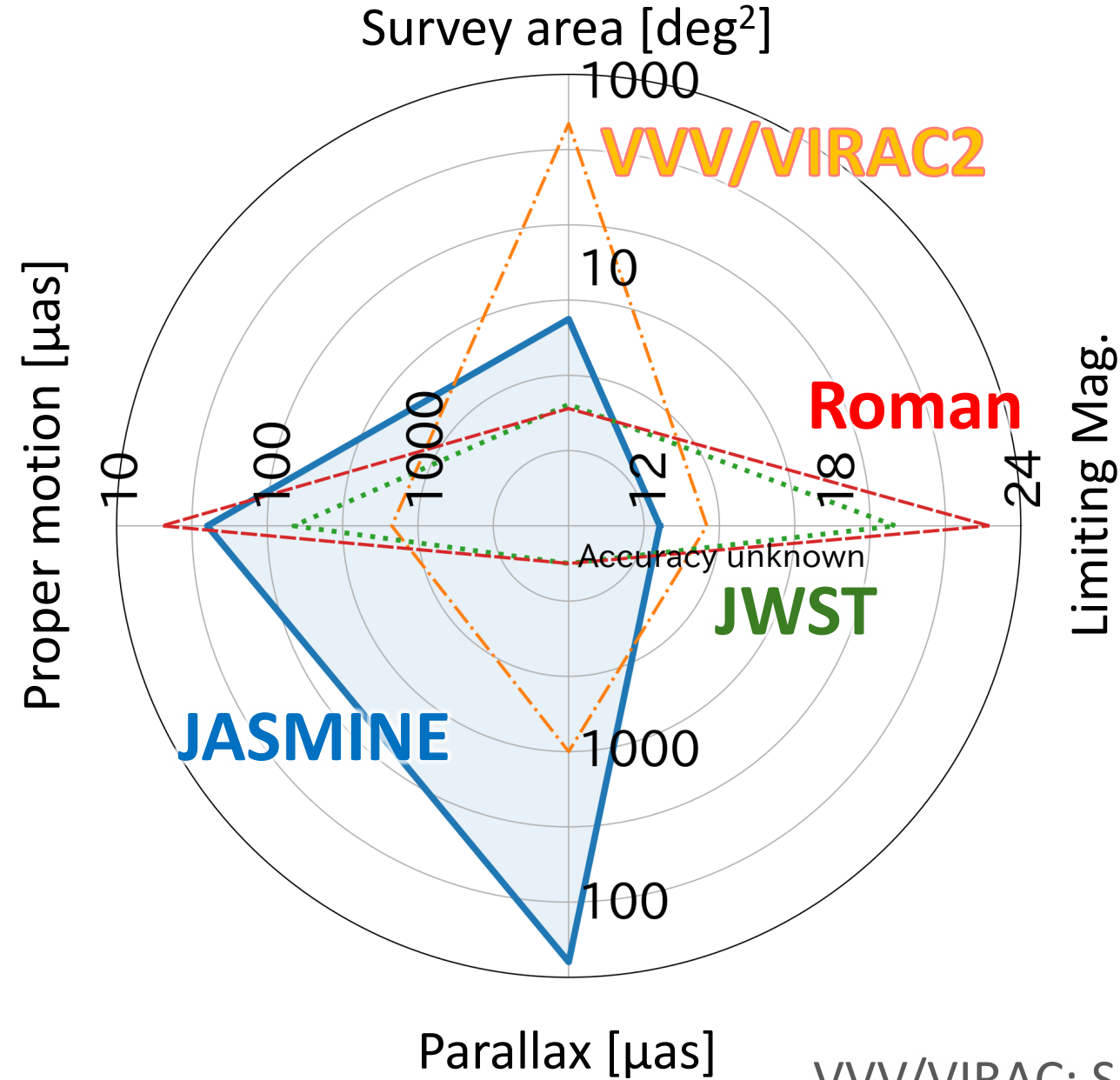
JASMINE GC survey, other surveys

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JASMINE GC survey, other surveys



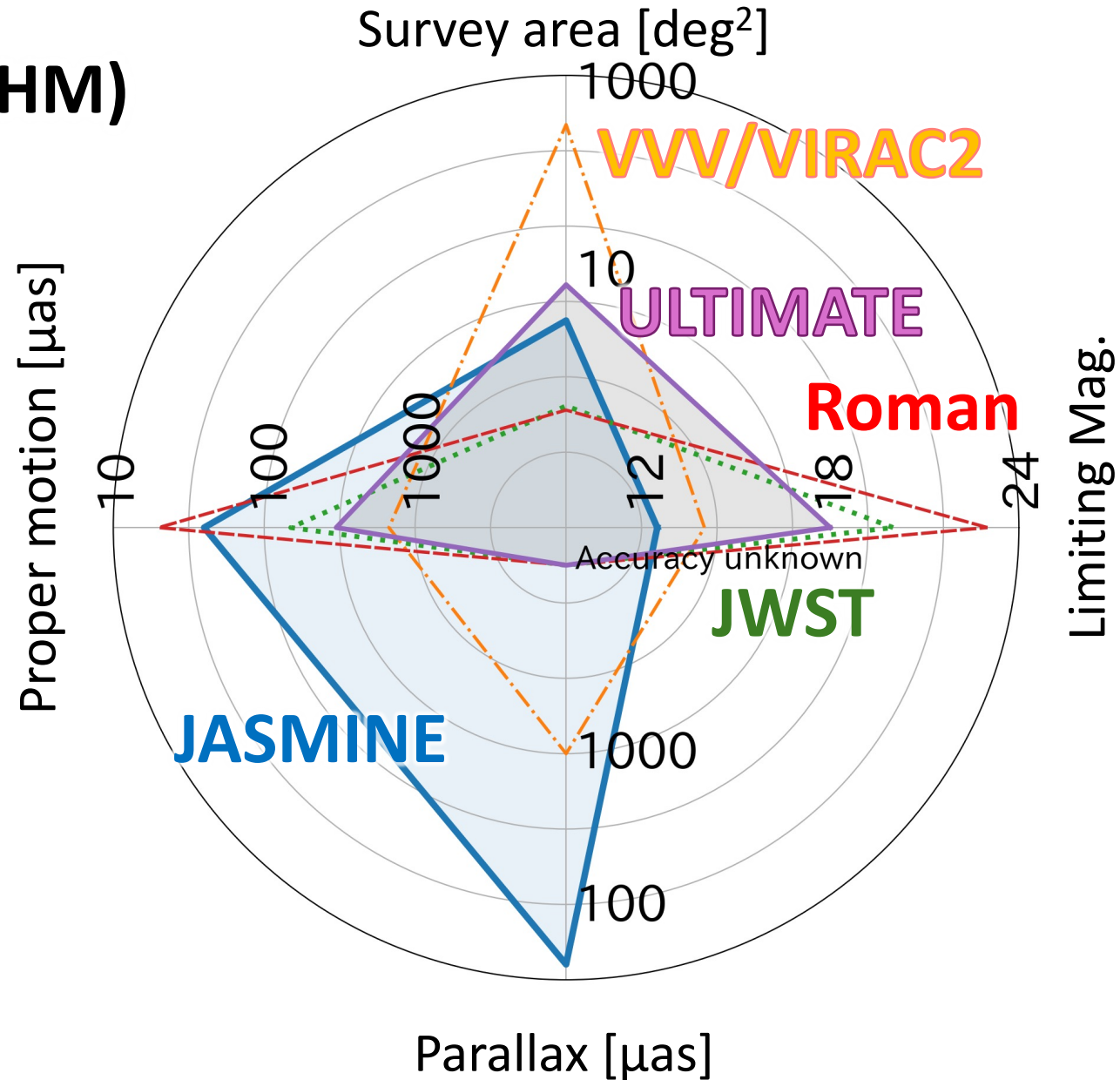
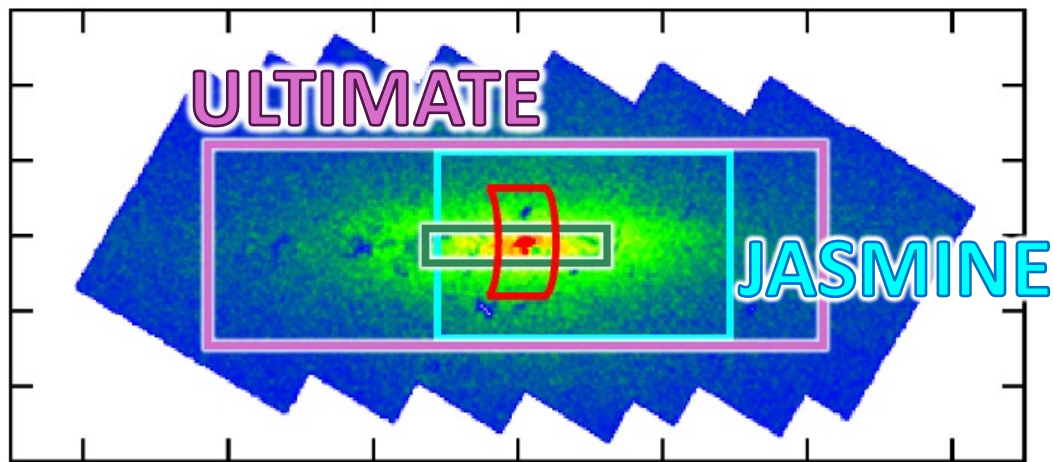
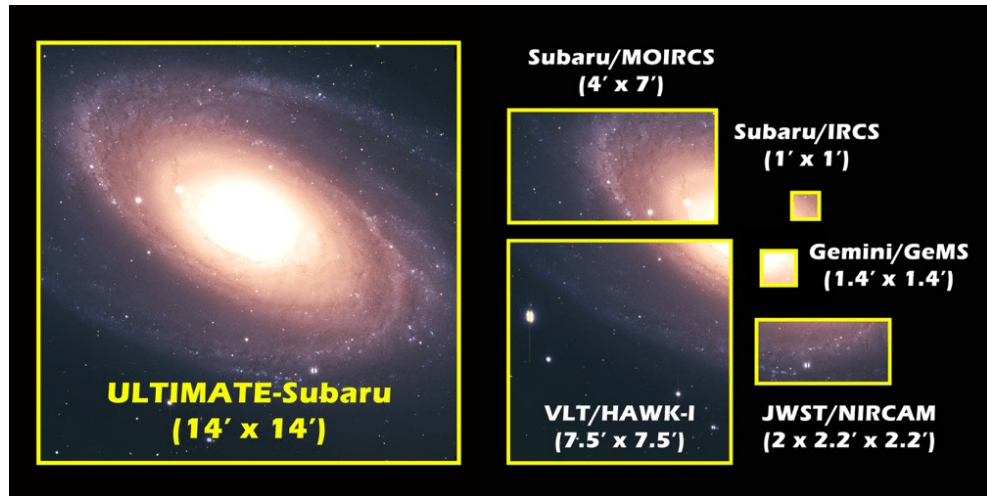
JASMINE GC survey

Shallower, but a moderately large survey with excellent proper motion and parallax measurements

Collaboration with Subaru/ULTIMATE

ULTIMATE-Subaru

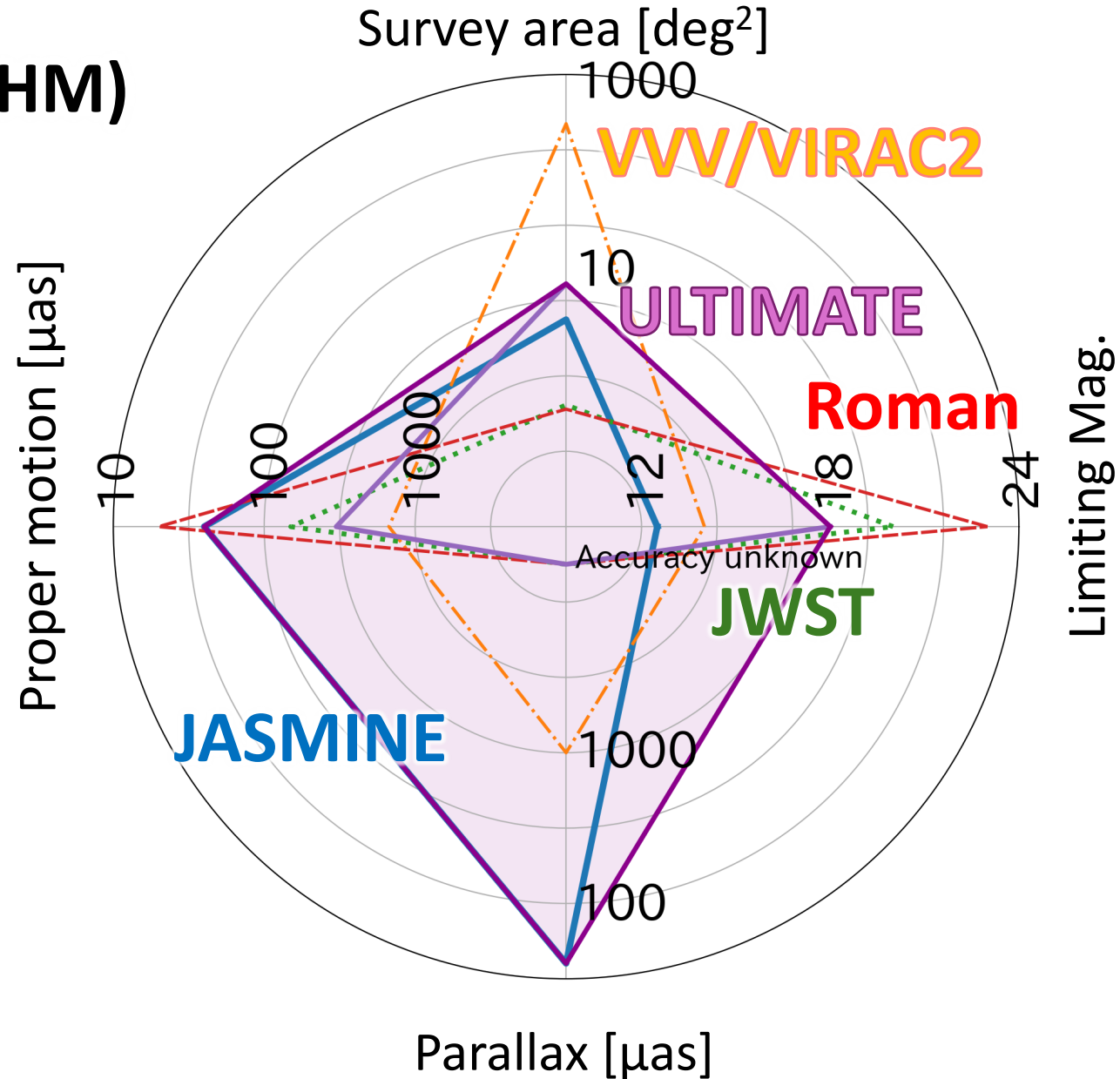
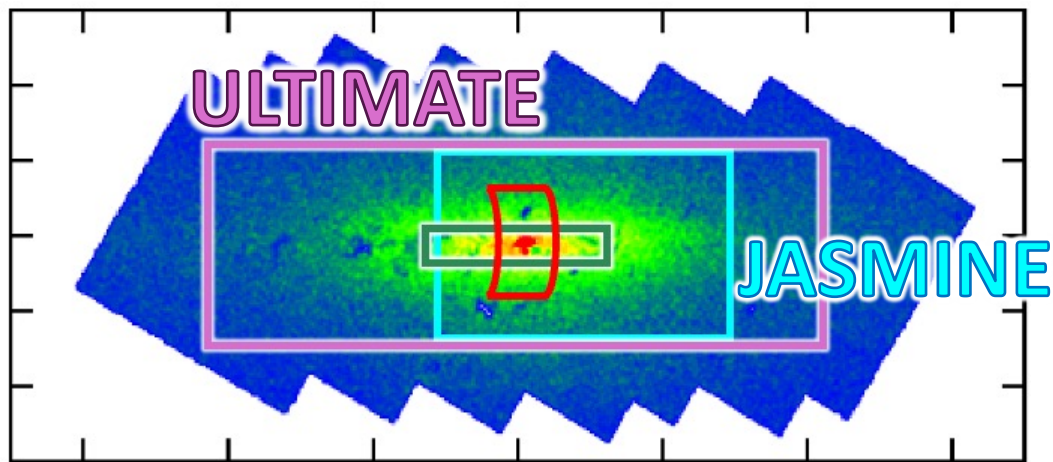
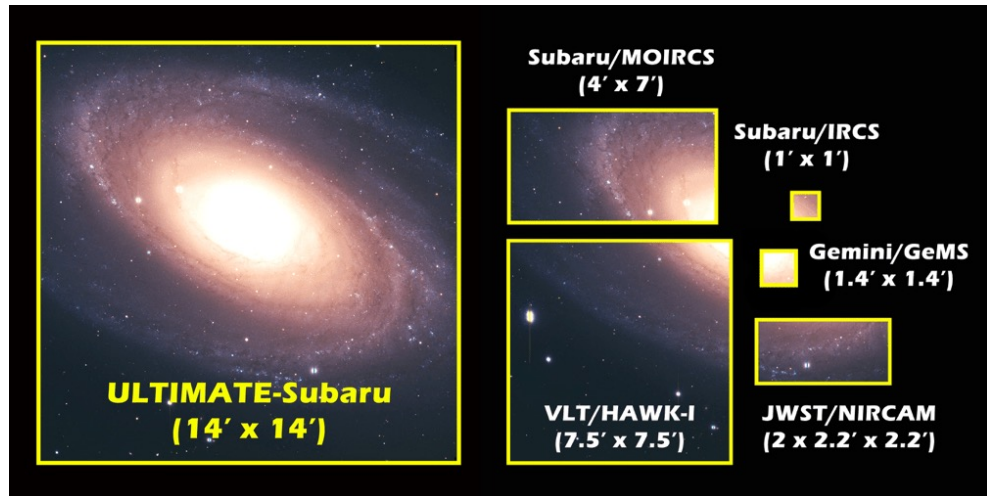
- Ground-Layer AO (0.2"-0.3" FWHM)
- Wide-field (14' × 14') IR imager



Collaboration with Subaru/ULTIMATE

ULTIMATE-Subaru

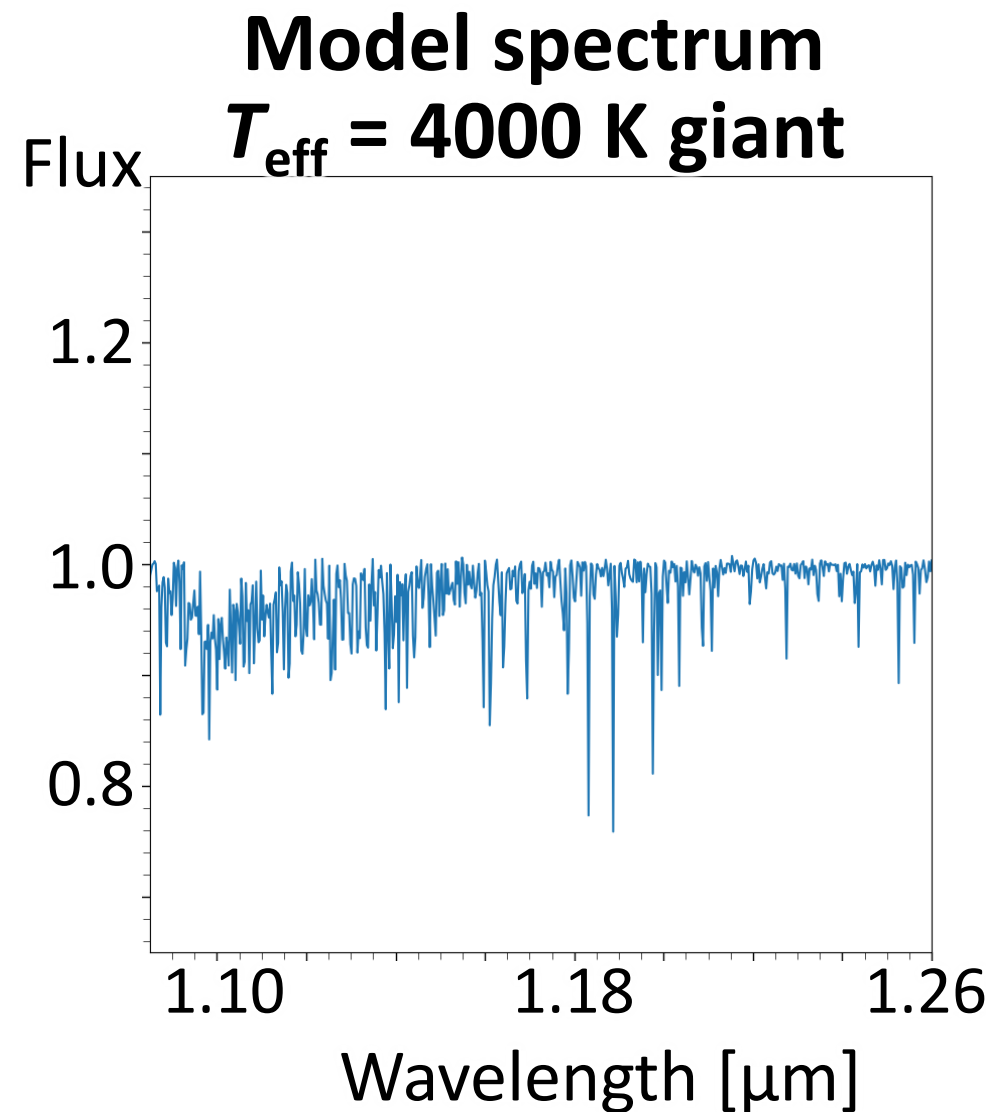
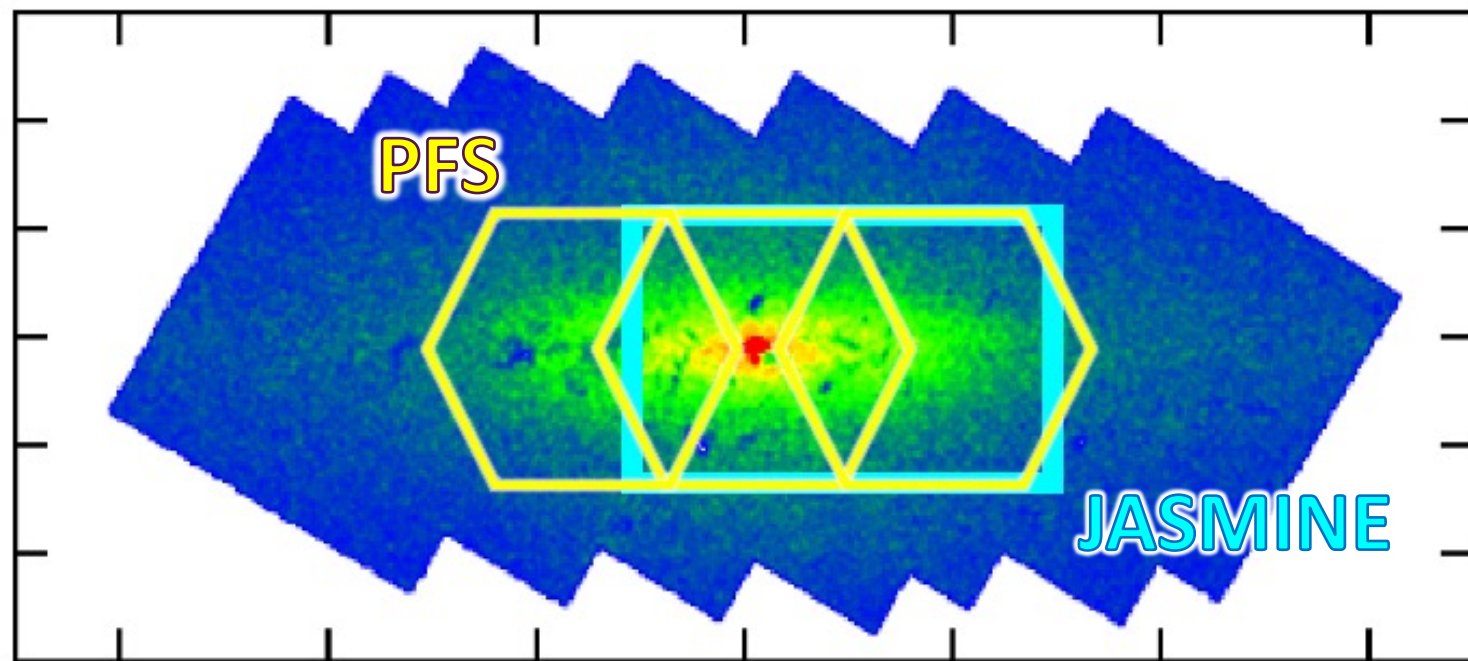
- Ground-Layer AO (0.2"-0.3" FWHM)
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Collaboration with Subaru/PFS

Subaru/PFS (Prime Focus Spectrograph)

- Multi-object spectrograph ($\sim 2,400$)
- Wide-field (1.25 deg^2)
- $R \sim 4,300$ at IR ($0.94 - 1.26 \mu\text{m}$)
- 3 FoV of PFS cover the JASMINE Field
- ~ 50 pointings \rightarrow all JASMINE targets



Collaboration with Subaru/PFS

6-D+ catalog from JASMINE and PFS



Position

Parallax

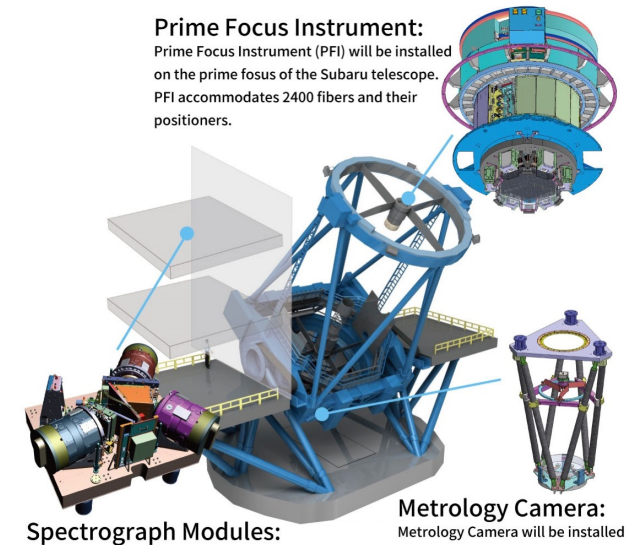
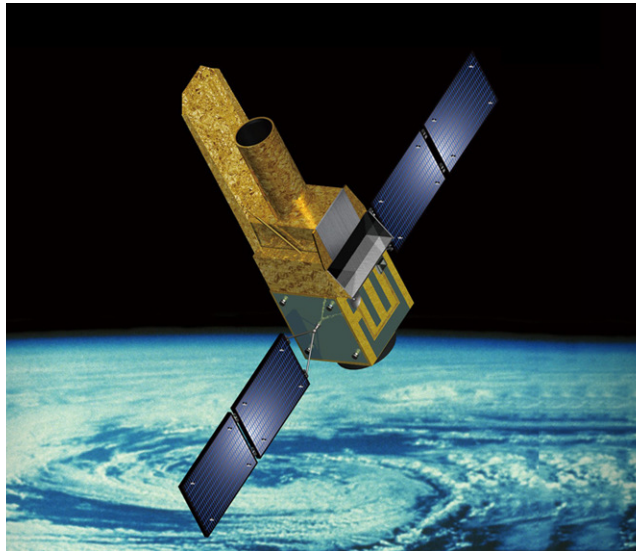
Proper motion

Radial velocity

T_{eff} , metal, age, etc.

JASMINE

Subaru/PFS



Data Release Policy

Catalog release scenario (TBD)

- step 1: stars with $< 450 \mu\text{as/yr}$ (proper motion)
- step 2: $< 250 \mu\text{as/yr}$ (proper motion)
- step 3: $125 \mu\text{as/yr}$ (proper motion), $40 \mu\text{as}$ (parallax)

データ公開方法、利用方法、論文化ポリシー等、
8月開催予定のJASMINE コンソーシアムミーティングで議論します。
興味のある方は参加をご検討ください。