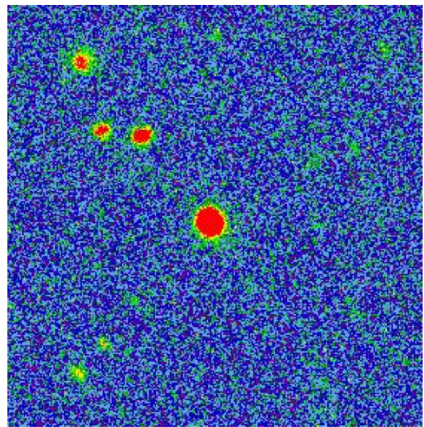


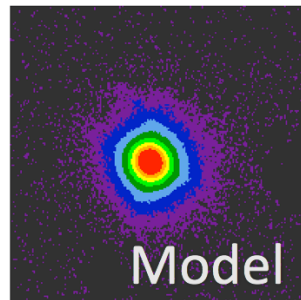
Low mass end of black hole – host galaxy relations of quasars

- ▶ low mass end of BH-galaxy relation has been studied until $z \sim 1$ and $\log M(\text{BH}) > 7-8 \log(M_{\text{sun}})$
- ▶ here we target higher z interval, and the lowest BH masses selectable from SDSS
 - ▶ low BH mass $\log(M_{\text{BH}}) \sim 8.2-8.5 \log(M_{\text{sun}})$
 - ▶ redshift interval of $1 < z < 2$
 - ▶ NIR H,Ks bands, HAWK-I, VLT (ESO, Chile)

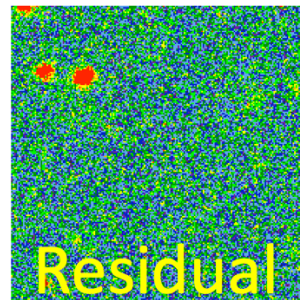
Example decomposition – PSF+SERSIC



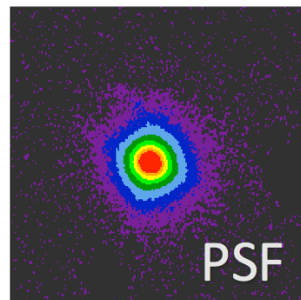
Quasar



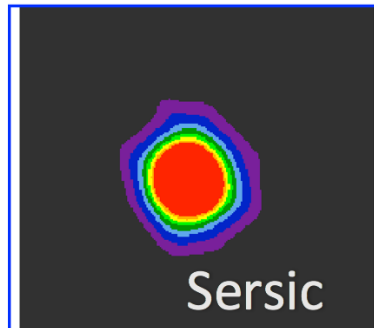
Model



Residual



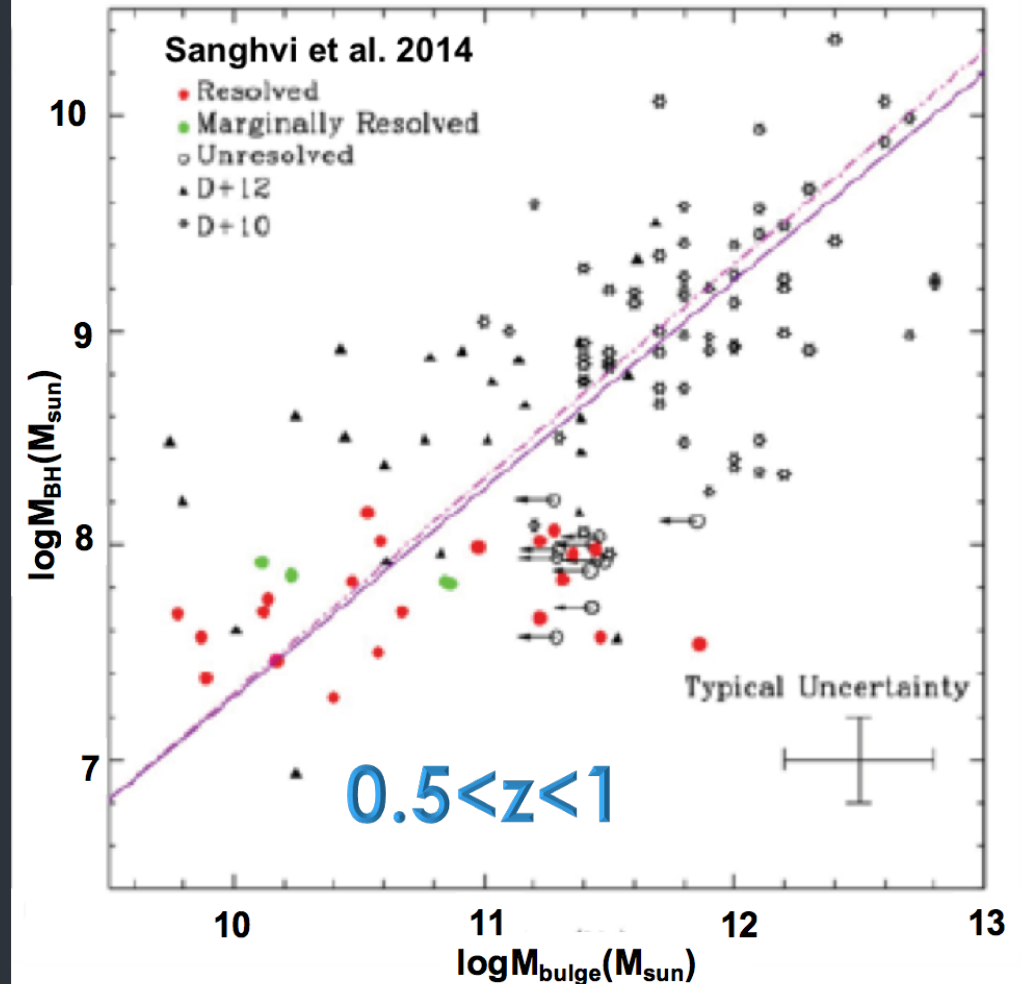
PSF



Sersic

Stone et al. 2019a, in prep

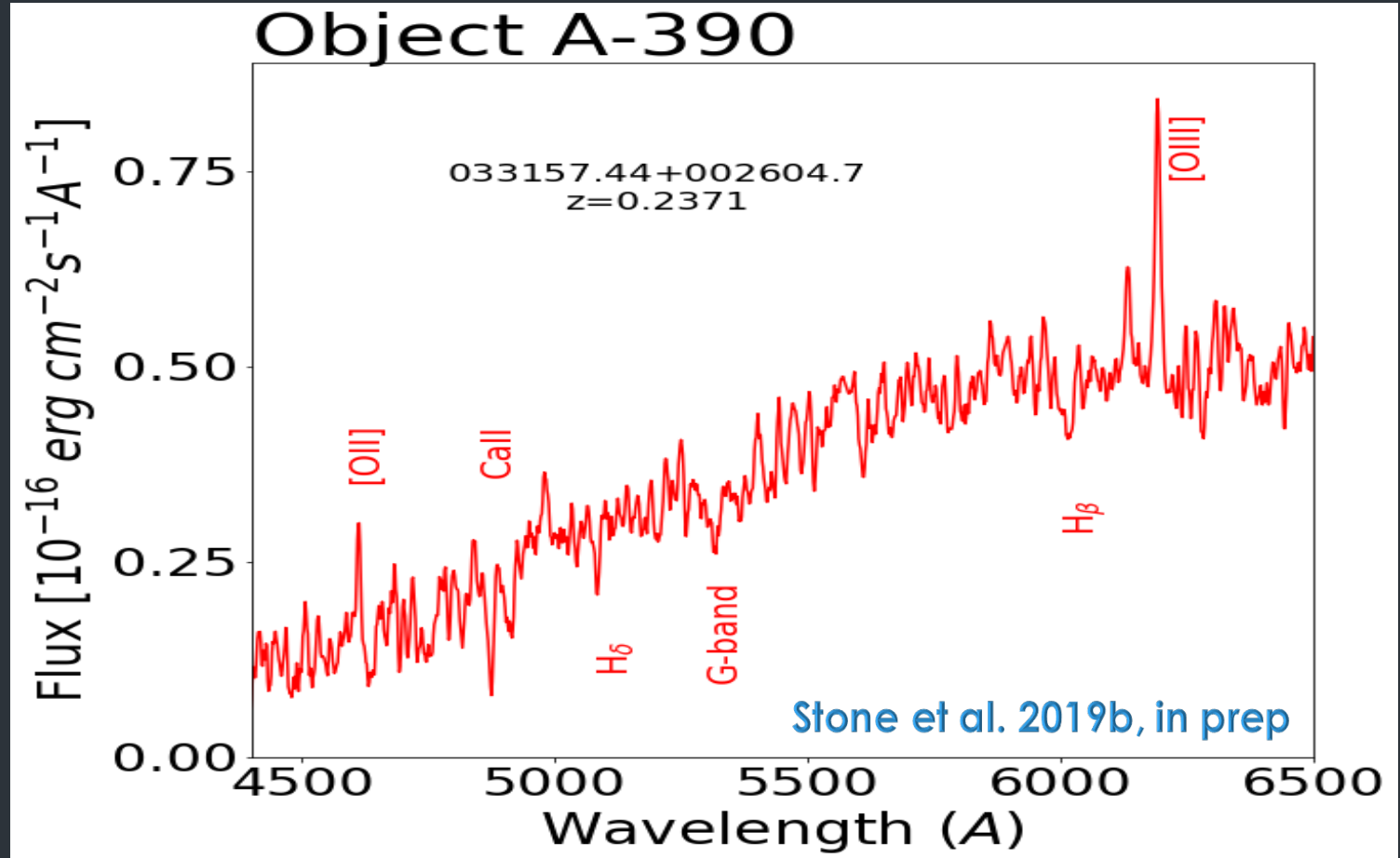
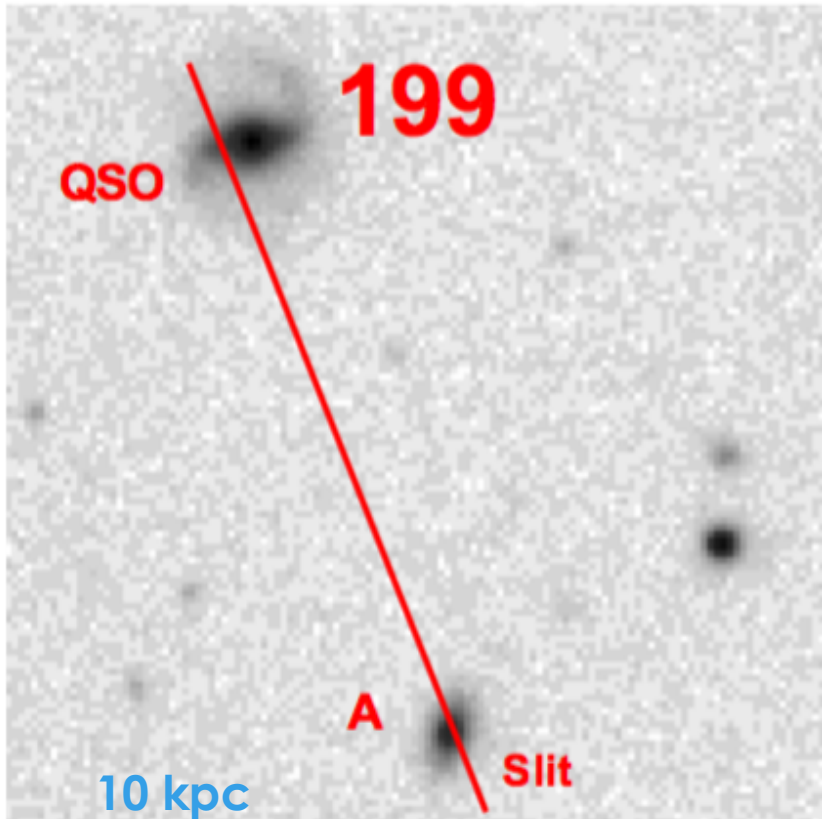
Blackhole-mass Bulge-mass relation with Bulge correction



Close environments of low-redshift quasars

This project aims to study the link between the QSO activity and recent star formation in QSO-hosts and their companion galaxies at $z < 0.5$.

- 36 quasar fields selected from a large, homogeneous sample (Falomo+2014)
- Optical spectroscopy with NOT (23) and GTC (13)
- Preliminary results, Bettoni et al. 2017 and this work indicate no clear evidence for higher SF
- Upcoming: MOS with NTT/EFOSC2 & Obscured AGN companions



Thank you!

Maria Babakhanyan Stone (Ph.D. exp. 2021)
M.S. Physics / M.A. French (California State)
astronomygo.com • **mbstone12@gmail.com**

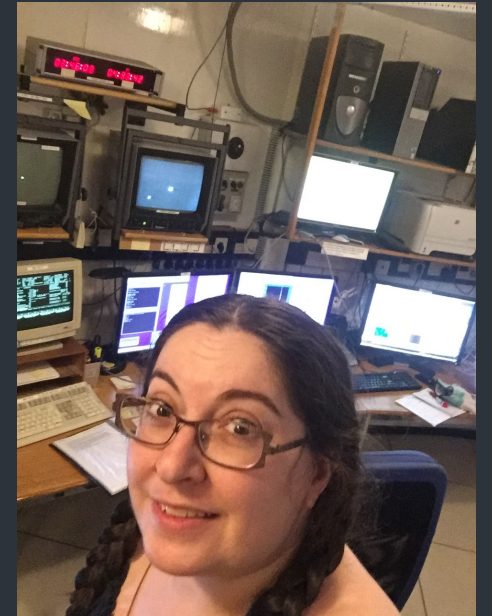
Collaborators

Jari Kotilainen¹, Renato Falomo², Daniela Bettoni², Ronald Läscher,
Kalle Karhunen³, Simona Paiano¹

¹ Finnish Centre for Astronomy with ESO (FINCA), Turku, Finland

² INAF – Osservatorio Astronomico di Padova, Italy

³ Department of Physics and Astronomy, University of Turku, Finland



P.S. Interested in Programming, Community Engagement, Mentorship,
Communicating Astronomy to the Public, and Supporting Diversity in STEM



Turun yliopisto
University of Turku