

# 岡山 ISLE による NGC 1068 の近赤外線分光観測

Near-infrared spectroscopic observation of NGC 1068 with OAO/ISLE

Tetsuya Hashimoto (Kyoto Univ.), Tohru Nagao (Ehime Univ.), Kenshi Yanagisawa (OAO), Kenta Matsuoka, and Nobuo Araki (Ehime Univ.)

## Galaxy formation and evolution



AGN feed back



?

Shock ionization of  
interstellar medium  
induced by radio jet



Shock → large  $[\text{Fe II}]\lambda 1.257 / [\text{P II}]\lambda 1.188$  ratio

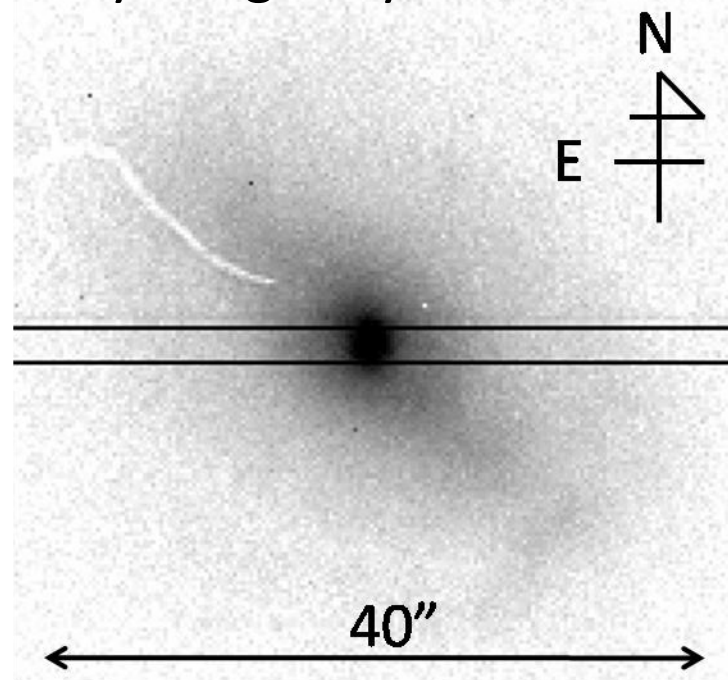
# Observation (OAO/ISLE)



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ISLE is a near-infrared ( $1.0\text{-}2.5\mu\text{m}$ ) imager and spectrograph for the Cassegrain focus of the 1.88 m telescope at Okayama Astrophysical Observatory (OAO). (See also <http://www.oao.nao.ac.jp/~isle/index.html>)

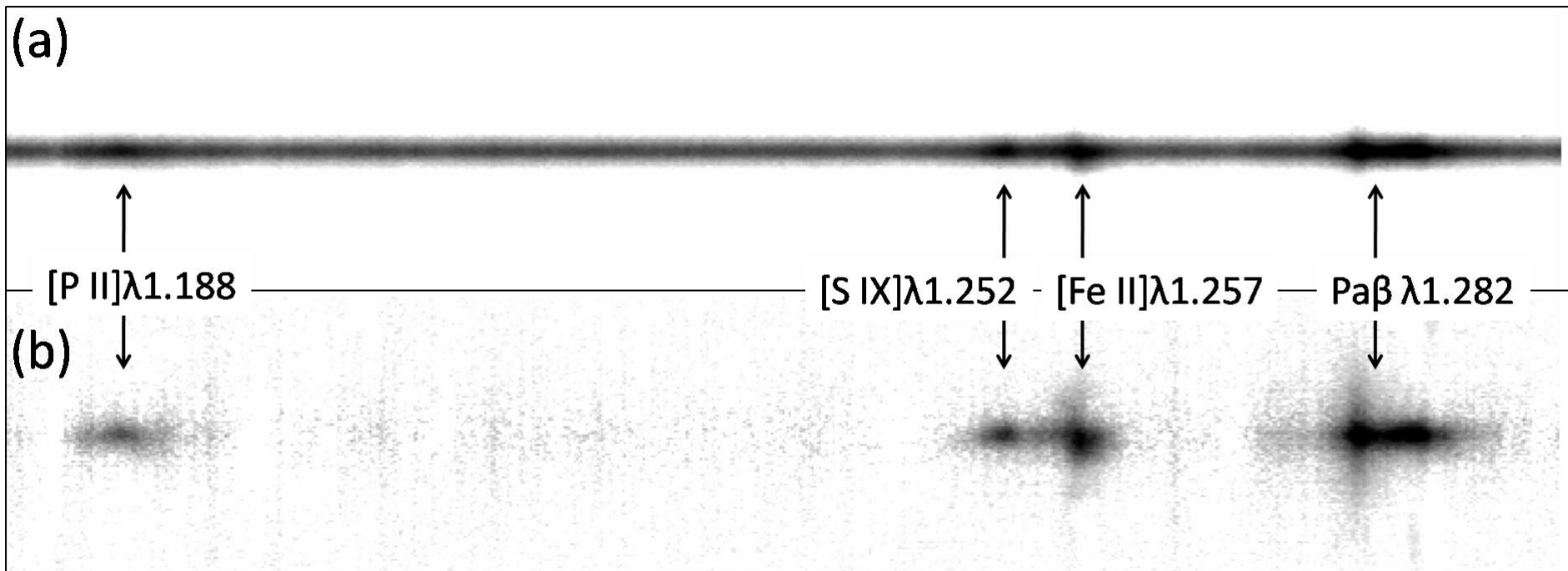
Seyfert galaxy NGC 1068



ISLE J-band image. Black lines show slit position with  $2''.0$  width

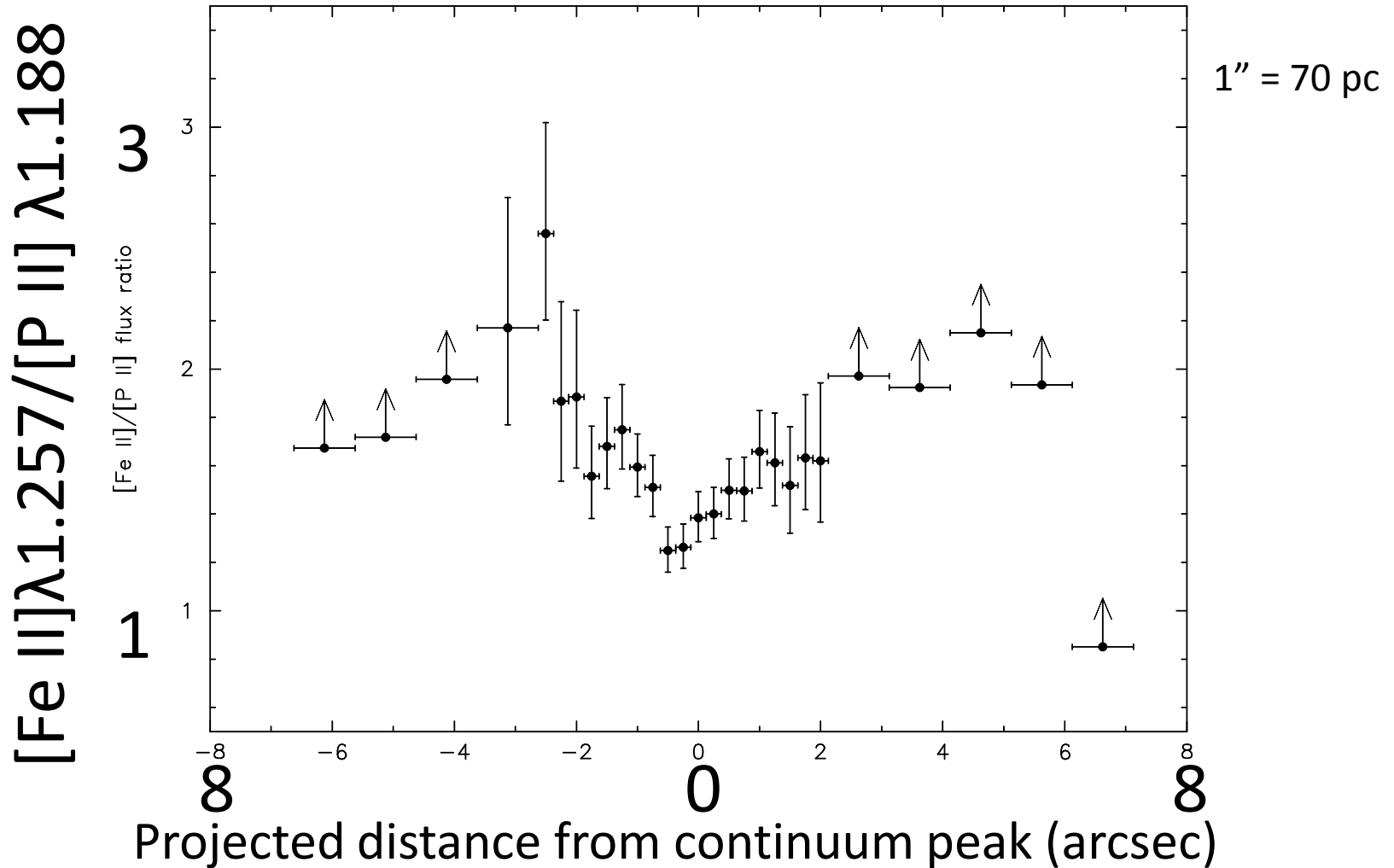
Target name	Date	Band	Total exposure time	Unit integration time	Slit width	Spectral resolution	Typical seeing
NGC 1068	8-12 Nov. 2009	$1.13\text{-}1.30\ \mu\text{m}$	4.4 hours	120 seconds	$2''.0$	$\sim 1000$	$1''.0 - 2''.0$

# Spatially extended [Fe II] $\lambda$ 1.257 and [P II] $\lambda$ 1.188 lines were detected!



2-D spectrum extracted from central  $\pm 15''$  region (a) and continuum-subtracted spectrum (b).

[Fe II] $\lambda$ 1.257/[P II]  $\lambda$ 1.188 increases with distance from a central continuum peak



Next step is Subaru and Gemini/NIFS!