

YEON-HO CHOI

Korea Astronomy and Space Science Institute & University of Science and Technology, Korea
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RESEARCH INTERESTS

Observational spectroscopy of exoplanet's atmosphere using a ground-based telescope with high-resolution spectrograph; hot gaseous giant formation; photo-evaporation of exoplanetary atmosphere.

EDUCATION

University of Science and Technology, Korea

Ph.D. - Astronomy and Space Science, September 2021 - (Advisor: Byeong-Cheol Lee)

Thesis topic: *"Characterization of atmospheric structure and species of hot gaseous giants using ground-based telescopes with low- and high-resolution spectrographs"*

Kyungpook National University

M.S. - Astronomy, February 2021 (Advisor: Myeong-Gu Park)

Thesis: *"Opto-Mechanical Design and Structural Analysis of Spectrophotometer for BOAO 1.8 m Telescope"*

B.S. - Astronomy and Atmospheric Science, August 2018 (Advisor: Myeong-Gu Park)

Minor - Physics

Senior Thesis: *"Comparison of radial velocity analysis results between Systemic Console version 1 and 2"*

OBSERVING EXPERIENCE

As Program PI

Gemini-S/GHOST

"Investigating Atmospheric Escape in Young Hot Jupiters", 5.0 hours, 2024

Gemini-S/IGRINS

"To quantify the effects of high irradiation on the lower and upper atmospheres of ultra hot Jupiters", 5.7 hours, 2023

Gemini-S/GMOS

"H alpha excess absorption in two hot Jupiters WASP-121b and WASP-18b: Detection of planetary mass loss", 10.0 hours, 2022

As Program Co-I

Magellan/WINERED

"Constraining the atmospheric escape and composition of a comet-like gas giant", 0.5 nights, 2024 (PI: Krishna Kanumalla)

BOAO/BOES

"Search for Exoplanets around Northern Circumpolar Stars", 324 nights, 2018 — (PI: Byeong-Cheol Lee)

BOAO/SPECTR

"Test and scientific observations of SPECTR - Determination of exoplanetary atmospheric characteristics", 117 nights, 2021 – (PI: Myeong-Gu Park)

PUBLICATIONS

Major Contributions

7. **Choi, Y.-H.**, M.-G. Park, K. Kim, J.-R. Koo et al. (2024). *SPECTrophotometer for TRansmission spectroscopy of exoplanets (SPECTR)*, PASP, 136, 8

Minor Contributions

6. Lee, B.-C., J.-R. Koo, **Y.-H. Choi**, T.-Y. Bang et al. (2023). *A Search for Exoplanets around Northern Circumpolar Stars. IX. A Multi-Period Analysis of the M Giant HD 135438*, JKAS, 56, 277

5. Lee, B.-C., H.-J. Do, M.-G. Park, B. Lim, **Y.-H. Choi** et al. (2023). *Long-period radial velocity variations of nine M red giants - The detection of substellar companions around HD 6860 and HD 112300*, A&A, 678, A106

4. Lee, B.-C., G. Jeong, J.-R. Koo, B. Lim, M.-G. Park, T.-Y. Bang, **Y.-H. Choi** et al. (2023). *A Search for Exoplanets around Northern Circumpolar Stars. VIII. Filtering Out a Planet Cycle from the Multi-Period Radial Velocity Variations in M Giant HD 36384*, JKAS, 56, 195

3. Chang, S.-J., H.-W. Lee, J. Kim, and **Y.-H. Choi** (2023). *Distribution and Kinematics of H i through Raman He ii Spectroscopy of NGC 6302*, ApJ, 949, 106

2. Lee, B.-C., J.-R. Koo, G. Jeong, M.-G. Park, I. Han, **Y.-H. Choi** (2023). *A Search for Exoplanets around Northern Circumpolar Stars VII. Detection of Planetary Companion Orbiting the Largest Host Star HD 18438*, JKAS, 56, 35

1. Lee, B.-C., M.-G. Park, I. Han, T.-Y. Bang, H.-I. Oh, **Y.-H. Choi** (2020). *A Search for Exoplanets around Northern Circumpolar Stars. VI. Detection of Planetary Companions Orbiting the Giants HD 60292 and HD 112640*, JKAS, 53, 27

INVITED TALKS AND SEMINARS

National Astronomical Observatory of China, “A Brief Introduction of Korean Exoplanetary Atmosphere Research”, May 2024

Institute for Basic Science Seminar, “Introduction of BOAO/SPECTR and its transmission spectroscopy results of two hot Jupiters, HD 189733b and Qatar-8b”, April 2024

CONTRIBUTED TALKS AND POSTERS

K-GMT Science Program Users Meeting 2024, “Understanding the Origin and Fate of Hot Jupiters through Observing Puffy Ones”, talk, August 2024

AOGS 2024, “Transmission spectroscopy of Exoplanet Systems HD 189733 b and Qatar 8 b”, poster, June 2024

Exoplanets 5, “Preliminary result obtained through high-resolution cross-correlation spectroscopy of the transiting hot Jupiter, WASP 69b”, poster, June 2024

2nd Stars, Milky Way, Local Volume and Exoplanet workshop, “A Brief Introduction of Korean Exoplanet Studies using Radial Velocity and Transit Methods”, talk, February 2024

12th Pacific Rim Conference on Stellar Astrophysics, “Transmission spectroscopy of close-in giant planets using ground-based telescope”, poster, October 2023

109th Meeting of the Korea Astronomical Society, “Preliminary result of transmission spectroscopy from Hot Jupiters using GMOS”, talk, October 2023

Ninth Annual Giant Magellan Telescope Community Science Meeting, “Introduction of Instrument Development for Transiting Exoplanets in South Korea”, poster, September 2023

4th Annual Korea Geoscience Union Meeting, “*Development and Test Observation Result of SPECTR*”, poster, August 2023

1st Israel-Korea workshop for Astronomy and Space Science, “*Preliminary Result of H alpha Excess Absorption Detection from Hot Jupiter using GMOS*”, talk, January 2023

31st General Assembly International Astronomical Union, “*SPECTR - an Optical Spectrophotometer for Transiting Exoplanets*”, poster, August 2022

LEADERSHIP ROLE

Chair of Korea Young Astronomers Meeting, March 2023 - March 2024

President of Student Council, January 2023 - December 2023