

[7GC-19] Commissioning of the Redshift Search Receiver

Aeree Chung^{1,2}, Min S. Yun³, Gopal Narayanan³, Mark Heyer³, Neal A. Erickson³, Ronald L. Snell³, William M. Irvine³

¹*Yonsei University*, ²*Smithsonian Astrophysical Observatory*, ³*University of Massachusetts*

The Redshift Search Receiver (RSR) is a sensitive, ultra-wideband spectrometer that is being built at the University of Massachusetts as one of the facility instruments for the 50-m Large Millimeter Telescope (LMT). It consists of four receivers each covering the entire 3 mm window from 74 to 111 GHz instantaneously. The primary goal of the receiver is to detect multiple molecular lines in galaxies at any distance and uniquely determine the redshift, in particular dust-obscured star forming systems at high- z which are not easily accessible. I will present some results from commissioning of the RSR on the Five College Radio Astronomy Observatory 14-m telescope, and discuss the future of the receiver.

[7GC-20] Early Science Results from CQUEAN Commissioning Observation

: Unique Views on Gamma Ray Bursts to High Redshift Quasars

Myungshin Im¹, Soojong Pak², WonKee Park¹, Changsu Choi¹, Yiseul Jeon¹, Eunbin Kim², Hyeongju Jeong², Jinyoung Kim³, and Juhee Lim³,

¹*CEO/Dept. of Physics & Astronomy, Seoul National University*,

²*School of Space Research, Kyung Hee University*,

³*Dept. of Astronomy and Space Sciences, Kyung Hee University*

CQUEAN (Camera fo QUasars in EARly uNiverse) is a newly developed camera by CEOU for the 2.1m telescope at the McDonald Observatory, Texas, USA. We report the early science results from the commissioning run of CQUEAN which include the observations of the gamma-ray burst (GRB) afterglows and quasars at $z \sim 5.5$. Although the data were originally taken to test the instrument performance, the results are already very encouraging. We uncovered GRB afterglows at $z = 0.8 - 1.4$, with our data being used for the international collaboration research to understand the nature of GRBs. The unique filter sets we employed are providing the data which are effective for selecting quasars at $z \sim 5.5$. The special aspects of CQUEAN - high sensitivity at 0.8-1.1 μm and fast readouts - will allow us to produce many interesting through surveys of high redshift quasars and fast follow-up of transient objects such as GRBs and exoplanets in future.