KVN Station Report (2018 October)

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EVN Sessions

KVN participated in almost all 1.3cm experiments of the session I and II, and OoS in 2018. During the EVN session I and II in 2018, KVN couldn't participate N18K1 and EZ028A experiments due to schedule conflicts with other observations. KVN Ulsan (Ku) was missed during the EVN session II because of the summer maintenance and KVN Yonsei (Ky) was also missed during two experiments on June 13 due to the same reason. KVN participation was summarized in the table below.

2018 EVN Sessions	Participated	Not participated
Session I	EB064A (13/03), EC057C (14/03), EM132A (15/03)	N18K1 (12/03)
Session II	N18K2 (07/06), EZ028B (10/06, Ky, Kt only) EZ028C (13/06, Ky only) EZ059B (11/06, Ky, Kt only) ET038C (11/06, Ky, Kt only) ET038D (12/06, Ky, Kt only) EM132B (11/06, Ky, Kt only) EC065 (13/06, Ky only)	EZ028A (09/06)
OoS	GG083c (31/01) GK052 (01/02) GG083d (08/02) GG083g (24/04) GG083j (26/04) GS042 (14/05)	

System Updates and Technical Developments

1) K-band Rx upgrade

After the upgrade of K-band Rx at KVN Yonsei telescope (Ky), two other K-band receivers at KVN Ulsan (Ku) and Tamna (Kt) were also upgraded during the summer maintenance season. Now all KVN K-band receivers covers the RF range from 18 GHz to 26 GHz (Trx ~ 25K).

2) W-band Rx upgrade

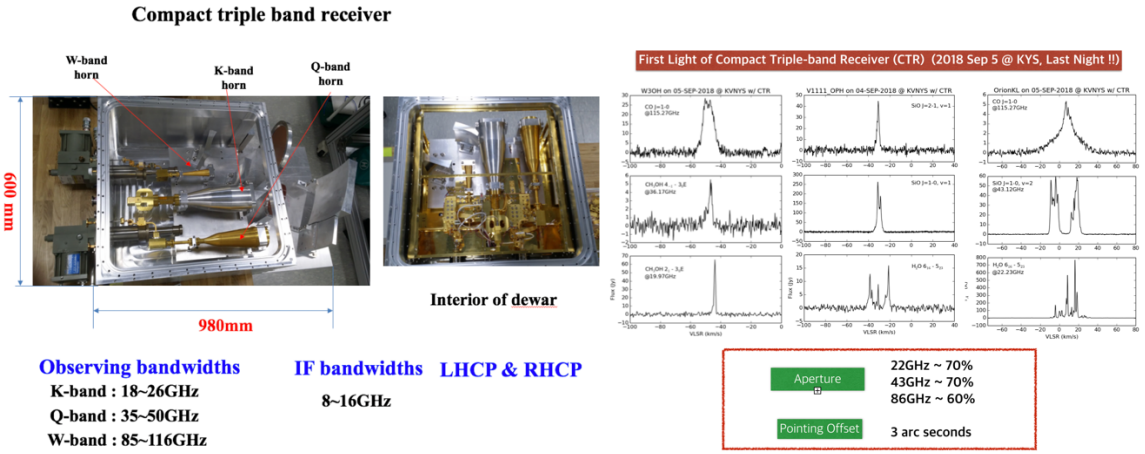
During the last summer maintenance, one of KVN W-band Rx at KVN Ulsan (Ku) was upgraded to cover wider RF ranging in 85 – 116 GHz (originally 85 – 95 GHz). Other two W-band receivers will be upgraded in the same way during the summer maintenance season next year.

3) OCTAD: New Backend System (under testing)

The new digital backend system, OCTAD, was introduced to support wideband observations. The OCTAD is capable of sampling an RF signal at up to 8192 MHz. The initial test has been made at the laboratory and it is installed at each KVN site. However, it's still under test to be connected to the current KVN filed systems. We hope that KVN will be able to support 2Gbps EVN observation using FILA10G, OCTAD, and Mark6 in near future.

4) Compact Triple-band receiver (CTR) test

The development of compact triple-band receiver (CTR) was completed and tested at KVN Yonsei (Ky) telescope in the early September. The CTR covers K/Q/W bands (18-26, 35-50, 85-116 GHz) with IF bandwidth of 8 GHz, which can be observed simultaneously. The size of CTR is around 60 x 90 cm including quasi-optics. We successfully detected the first light of CTR at KVN Yonsei telescope including CO J=1-0 lines at 115 GHz. The measured aperture efficiencies are slightly better than the current system.



Recorder Firmware

- Current MK5B Software Version:
  Squeeze, SDK 9.2 & jive5ab-2.6.0, mark5_2.2.0 & mk5bio_2.0.1