

eMERLIN+EVN status update

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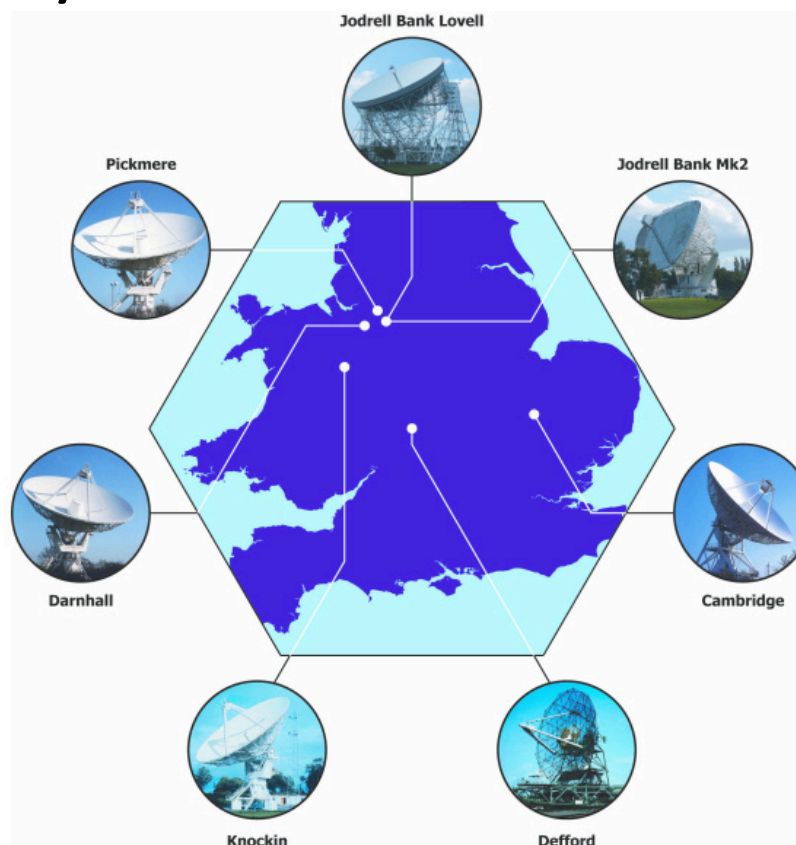
Jodrell Bank Observatory

EVN TOG meeting 2018-10-04
Instituto de Astrofísica de Andalucía
Granada

Outline

- Why eMERLIN in EVN?
- eMERLIN eVLBI progress
- More JBO progress since March
- Current JBO VLBI issues and plans

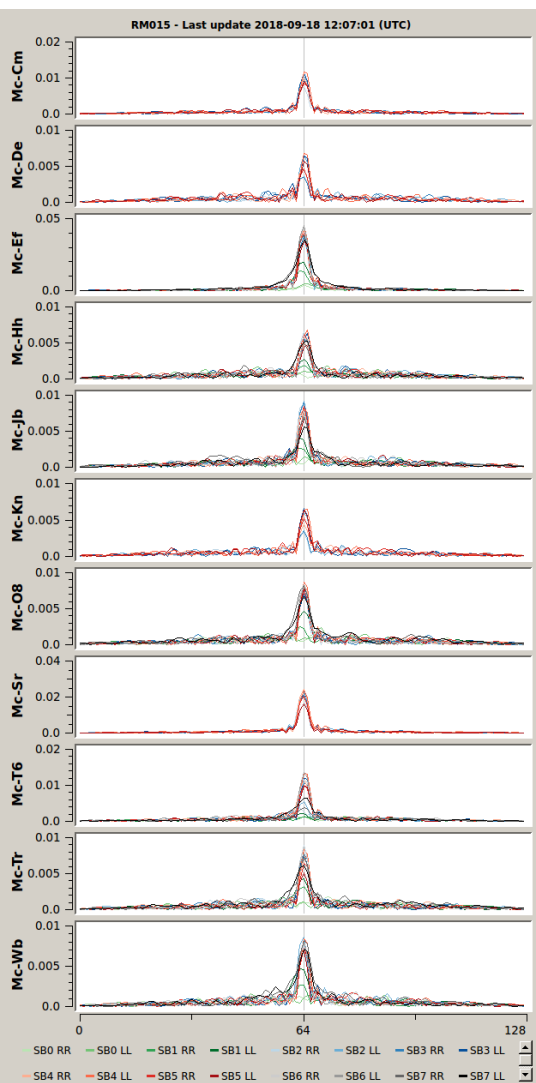
Why eMERLIN in EVN?



Baselines (i.e. science) !

VLA (<36 km) <-> eMERLIN (11 km to 217 km) <-> EVN (>100 km)

eMERLIN eVLBI!



← Cambridge – WIDAR 512Mbps

← Defford – WIDAR 512Mbps

← Mark 2 (Jb2) – DBBC 1Gbps

← Knockin – WIDAR 512Mbps

In theory we can do 4 WIDAR stations at 1Gbps plus one DBBC/FILA station, but limited by 3Gbps bandwidth to JIVE.

More JBO progress since March

- VLBI LO changes → Jb1 & Jb2 3x better SNR
- Jb2 pointing → hysteresis issue solved
- New WIDAR software → Improved VDIF quality
- New maserdrift logging → Usable drift values

Current JBO VLBI issues

- Improve pointing models for all tels → ongoing
- Jb1/Jb2 Cont. cal Tsys → work ongoing
- WIDAR De/Kn sampling issues → investigating
- WIDAR phase instabilities → investigating
- 3 Gbps eVLBI limit → investigating
- eMERLIN Tsys logging → not prioritised for now