FOCAL PLANE ARRAY FOR THE GBT: AN ORDER OF MAGNITUDE INCREASE IN SENSITIVITY

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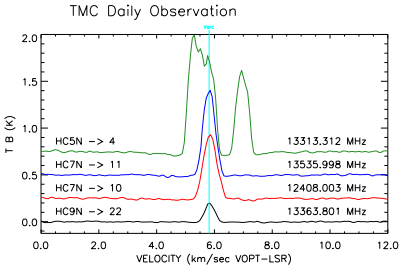

The 100m diameter Robert C. Byrd Green Bank Telescope (GBT) is the worlds most sensitive instrument for detection of interstellar molecular lines in the frequency range 10 to 50 GHz. With the GBT, scientists have recently discovered several new interstellar molecules and have started large molecular line surveys.

The GBT spectrometer is capable of simultaneously observing four 50 MHz bands, with high spectral resolution (see image). To increase sensitivity to complex organic molecules, the NRAO is developing a 61 pixel focal plane array for the frequency range 18 to 26 GHz. In addition, the NRAO is planning an order of magnitude increase in the spectral bandwidth that may be simultaneously observed with high spectral resolution.

In this talk we review the recent discoveries with the GBT and present the focal plane array development project plan.