VLBA ACQUISITION MEMO #216

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To: VLBA Data Acquisition Group

From: Alan E.E. Rogers

Subject: Alternate IC for L.O. unlock indicator in BBC

There have been some reports of failure of the Texas Instrument's TLC372CP IC in the unlock circuit. While considerable bench testing has failed to provoke a failure, there is a statement in the TI data book that says "The digital output of the TLC372 can be damaged if it is held in the linear region of the transfer curve." Upon checking with Paul Davis of TI, it is possible for the internal FETs in some of these ICs to fight each other and it is not recommended that the IC be used without hysteresis to guarantee that the IC never stays in the linear region.

It looks like a better IC for our purpose is the LM193JG, which can safely operate in the linear region. I am ordering some LM193s for testing and I will most likely request a design change for:

a) Replace TLC372 with LM193 if it fails (since most of these ICs work fine)

b) Use LM193 for new units.