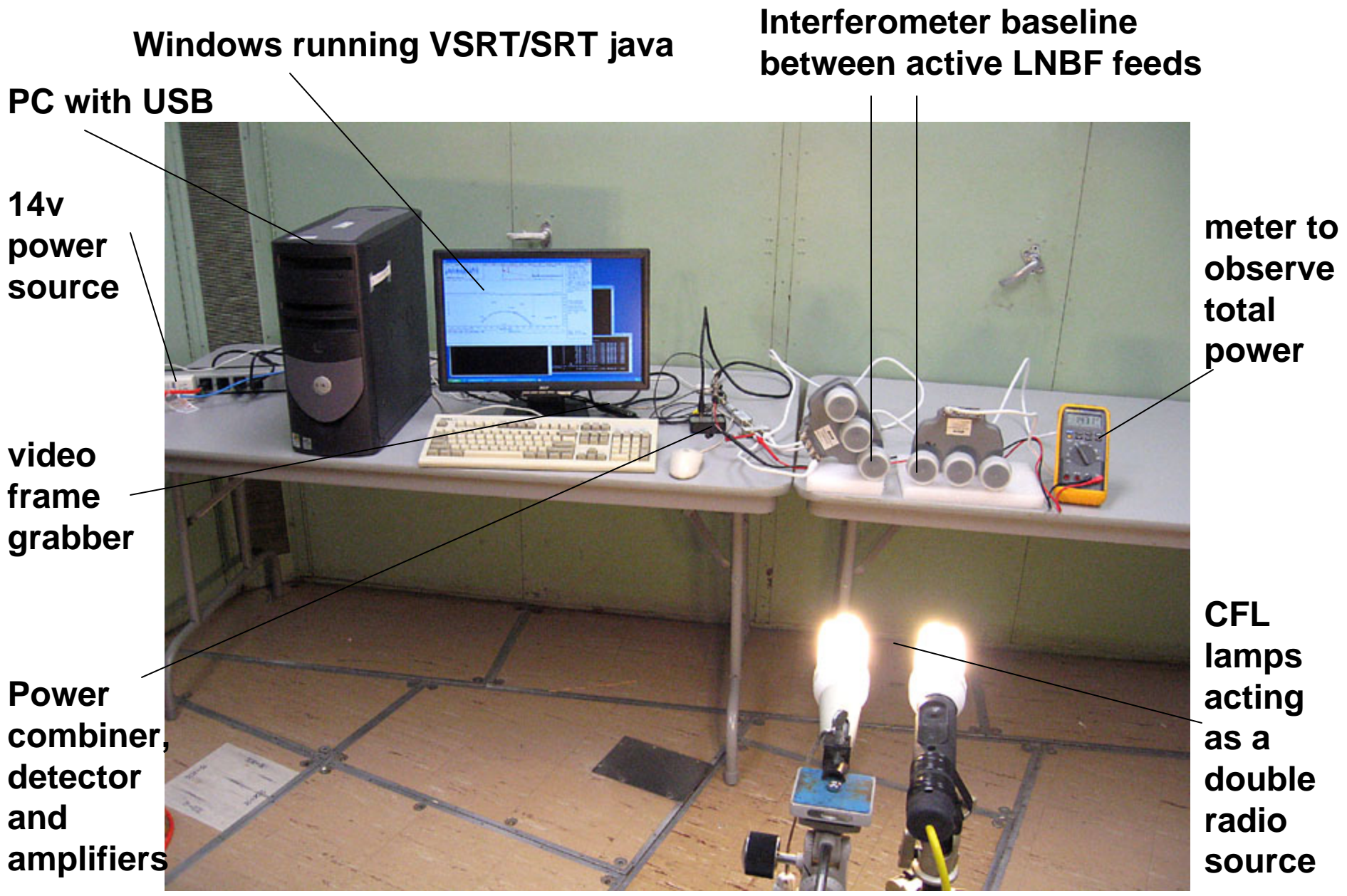


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To: VSRT Group
From: Alan E.E. Rogers
Subject: Simplest laboratory set-up to demonstrate the principles of radio interferometry

- Compact fluorescent lamps are used as signal sources for a short baseline interferometer.
- The lamps separated so that they are in the first null of the visibility as seen by the LNBFs. In this case turning one lamp off decreases the total power observed by the voltmeter across the power detector but **INCREASES** the fringe power as can be seen in the SRT/VSRT display of the fringe power vs time.
- More experiments/demonstrations can be done with this set-up which are described in more detail in VSRT memo # 26



Windows running VSRT/SRT java

Interferometer baseline
between active LNBF feeds

PC with USB

14v
power
source

meter to
observe
total
power

video
frame
grabber

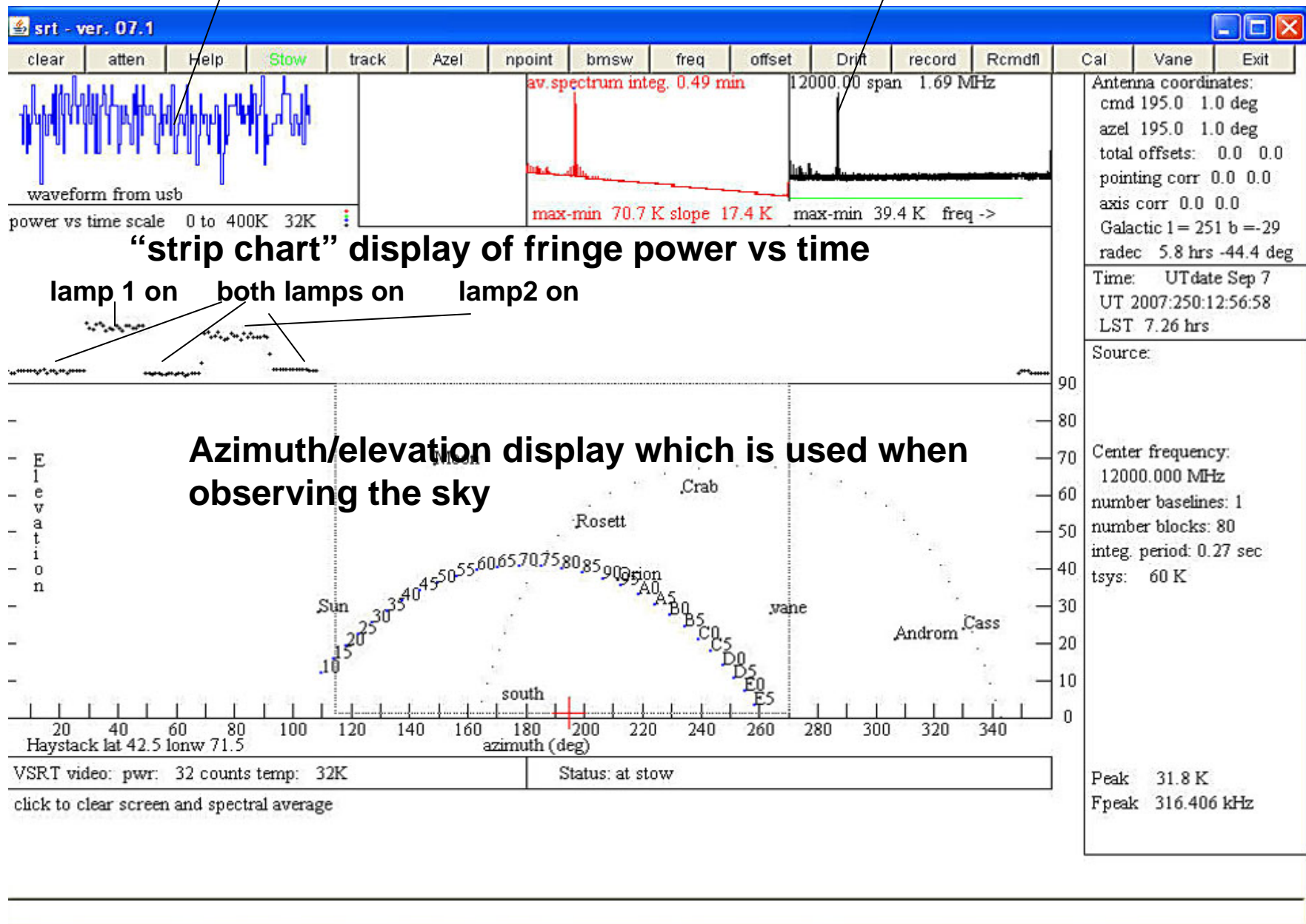
Power
combiner,
detector
and
amplifiers

CFL
lamps
acting
as a
double
radio
source

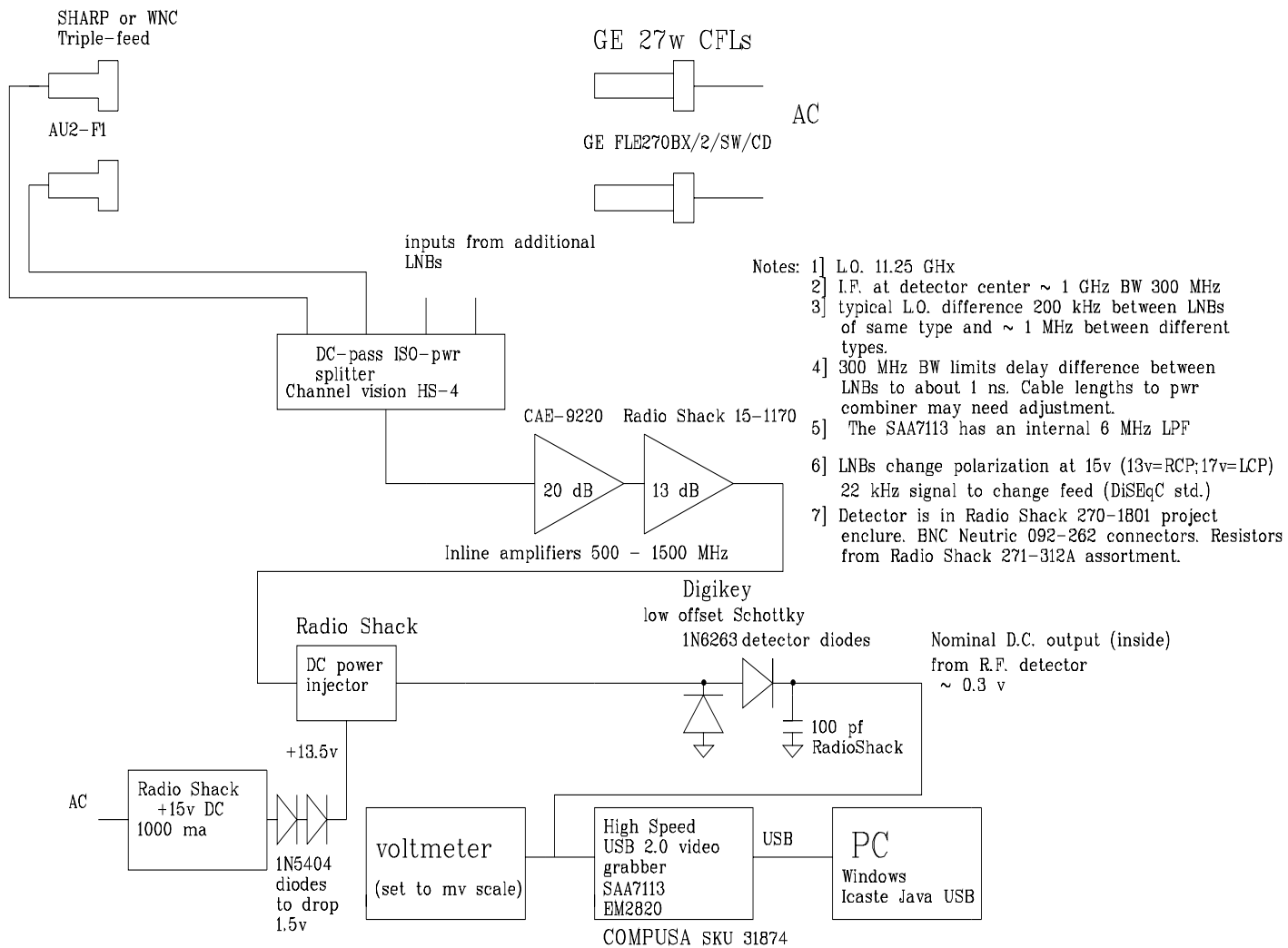
Simple laboratory setup to demonstrate the principles of radio interferometry

waveform from frame grabber

real time display of fringe power



Capture of java screen showing the fringe power which goes down with both lamps on since the set-up is close to the first null in the visibility for a double source.



Block diagram of the set-up