

Targets for FIBRE: May 2001

Dominic Benford; April 25, 2001

Our predicted sensitivity is $10 \text{ Jy}/\sqrt{\text{Hz}}$ in good weather per spectral channel. The CSO antenna temperature conversion factor is approximately 30 Jy/K and the spectral resolution in velocity units is about 300 km/s . Therefore our Noise Equivalent Line Flux (NELF) is $100 \text{ K km/s Hz}^{-1/2}$.

It is reasonable to assume that we'll spend 10 minutes of on-source time per channel (which would probably take an hour of real time) and so we'll have a 1σ detection threshold of 4 K km/s . Assuming that we want a good detection (5σ), we must choose galaxies that will probably have fluxes of $>20 \text{ K km/s}$. In order to remove baselines, we'll have to have several spectral points. I therefore choose a brightness cutoff of 40 K km/s at CO 3-2 as a reasonable selection criterion. In truth, the objects will probably be much brighter at CO 6-5, but we'll also need more time than we think...

I created this list from some set of my previous observations, representing galaxies which are well-studied at the CSO. It is likely that the brightest CO galaxies are well-represented on this list. However, the list is far from comprehensive. Please suggest additions.

A subset of these objects was chosen based on visibility during the May 2001 run. I have color-coded the non-visible ones to be a bit fainter. These horizons for the visible sources are plotted along with some Solar System objects. As for the pointing/calibration sources: anything $>1,000 \text{ K km/s}$ is visible instantly. Pointing will probably require continuum objects with $\sim 100 \text{ Jy}$ at $350 \mu\text{m}$.

Sources:

Name	RA (B1950)	Dec (B1950)	Flux (K km/s)
NGC253	00:45:05.9	-25:33:40	938
M82	09:51:43.5	69:55:01	257
NGC1068	02:40:07.1	-00:13:31	149
NGC660	01:40:21.7	13:23:40	121
VV114	01:05:19.7	-17:46:26	63
NGC4536	12:31:52.5	02:27:50	61
NGC2146	06:10:40.1	78:22:23	52
NGC3504	11:00:28.5	28:14:31	47
UGC2855	03:43:15.7	69:58:46	47
NGC4039	11:59:20.0	-18:36:24	47
Arp299	11:25:44.2	58:50:18.1	46
NGC4826	12:54:16.9	21:57:18	45
Arp220	15:32:47.0	23:40:08	45
NGC4321	12:20:23.2	16:06:00	43

For pointing/calibration sources, I note that the following objects should be detectable:

Orion	05:32:49.9	-05:25:21	10,000 K km/s
IRC10216	09:45:14.8	13:30:41	1,000 K km/s
Many UCHIIIs	x	x	100 K km/s
Mars	x	x	10,000?
Uranus	x	x	1,000?

Day: 30-MAY-2001
18 21 0 3

U.T.C.
6

Obs: -155:28:18.00 19:46:36.000
9 12 15

