

```
#
# Calculating Luminosity distance for galaxies with given redshift.
# Given the cosmological model, results are printed in file Ld in
# units of centimeter.
#
import astropy as astr
# http://astropy.readthedocs.org/en/latest/cosmology/
from astropy.cosmology import FlatLambdaCDM
import astropy.units as u
#
#cosmo = FlatLambdaCDM(H0=70, Om0=0.3)
cosmo = FlatLambdaCDM(H0=70 * u.km / u.s / u.Mpc, Om0=0.3)

print (cosmo) #gives H0, Om0, Tcmb0 temperature CMB z=0, Neff effective number
              of Neutrino species, m_nu neutrino mass.

NumGal, z = loadtxt('sample_dust_mw.txt',unpack=True, usecols=(0,1))

Ld=cosmo.luminosity_distance(z).to(u.cm)                # Units in cm, if
                u suppressed, unitless in Mpc
print (Ld)
#
# print to file
#
Ld=array(Ld)
Ld.tofile('Ld',sep='\n')
```