

		Scientific Measurement Requirements			Instrument		
Science Goals	Science Objectives	Model Parameters	Physical Parameters	Observables	Instrument Functional Requirements	Projected Performance	Mission Functional Requirements (Top Level)
Explore how the universe evolved (magnetic fields)	Determine if Magnetic Fields are the dominant cause of star formation repression in the Galaxy	Magnetic Field strength B as a function of scale and Rt(k) the turbulent power spectrum from cores to diffuse cloud envelopes.	Magnetic field maps of molecular clouds	Linear polarization at frequencies > 300GHz over the entire sky to obtain maps of thousands of molecular clouds with <1pc resolution and <0.05pc for the 10 nearest MCs.	Angular resolution: 1 arcmin. Sensitivity: 27,400 Jy/Sr (9090 microK) at 799 GHz; 7,570 Jy/Sr (147 microK) at 555 GHz.		
Explore how the universe evolved (magnetic fields)	Determine the relative importance of magnetic fields in the gas dynamics of galaxies		Magnetic field maps of nearby external galaxies	Linear polarization at frequencies > 300GHz over the entire sky to obtain maps of a statistically-significant set of external galaxies.	Angular resolution < 1 arcmin		
Explore how the universe evolved (magnetic fields)	Test models of the magnetic field influence in the diffuse ISM and on the HII to HI to H ₂ phase transition	Magnetic Field strength B as a function of scale and Rt(k) the turbulent power spectrum of the diffuse ISM.	Magnetic field maps of the diffuse ISM	Linear polarization at frequencies > 300GHz over the entire sky, with <0.1 pc resolution for the edge of the local bubble (d~100pc).	Sensitivity: A _v <0.1 (need to convert to Jy/sr) , < 4 arcmin resolution		
Explore how the universe evolved (magnetic fields)	Test the theory that Radiative Torques are responsible for the alignment of dust grains with magnetic fields		Polarization spectra	Linear polarization at many frequencies > 300GHz over the entire sky	Combination of number of bands and angular resolution?		