

GP-PU Research Plan

Hajime Ogane (Astronomical Institute, D1)

[D1] In my first year in my doctoral course, I will mainly work on the development of atmospheric turbulence profiler for Subaru telescope. I am going to evaluate the profiling method which I have developed through my master course(SH-MASS) by comparing the result with that of another profiling method(g-SCIDAR). The result of the evaluation is going to be presented in the SPIE conference in December 2020. In parallel to this evaluation, I will proceed with the optical/mechanical designing, manufacturing and software developing for the turbulence profiler.

[D2] In my second year, I will work on the development of LTAO(Laser Tomography Adaptive Optics) wavefront sensors and preparation for the observation using LTAO and IFS(Integral Field Spectrograph). Regarding to the development work, I will simulate the performance of LTAO system under the guidance of Prof. Francois Rigaut in Australian National University. In terms of preparation for observation, I am going to practice data analyzing using archival IFS data and select observation candidates for our own observation with LTAO. And in this year, I will also earn credits of GPPU lectures (seminars+schools) and GPPU experiments.

[D3] In my last year, I am going to write my Ph.D thesis focusing on the three main themes; developing optical adaptive optics system for Subaru telescope, observation of distant star-forming galaxies with the system and technical proposal of the LTAO for the future extremely large telescopes.

	2020				2021				2022				2023
	D1				D2				D3				
	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	
Development of atmospheric turbulence profiler	Designing of SHWFS for the profiler Crosscheck of SH-MASS with gSCIDAR		Development of SHWFS										
Development of LTAO wavefront sensor			Test Observation with LTAO wavefront sensor prototype		Development of 3 wavefront sensors Performance simulation of LTAO @ANU		Test Observation with LTAO wavefront sensors						
IFS observation of distant star-forming galaxies	Practice analysing spectroscopy data	Practice analysing IFS data	Decide IFS science theme		Science research with IFS data					Observation with LTAO+kyoto3DII	Data analysis		
Presentation / Paper		Paper of SH-MASS ASJ	SPIE	ASJ				Paper of IFS ASJ		Ph.D Thesis			
GP-PU credit	GPPU seminar				Overseas training								
	GPU Experiment ①		GPU Experiment ②		GPU Experiment ③		GPU Experiment ④						QE2