A New Era in Exoplanet Atmosphere Observation and Characterisation

Bad Honnef Physics School, 20-25 July 2025

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
07:30 – 09:00		Breakfast				
09:00 – 10:30		Lecture 1	Lecture 3	Lecture 5	Lecture 7	Lecture 8
10:30 – 11:00		Coffee				
11:00 – 12:30		Lecture 2	Lecture 4	Lecture 6	Hands-on exercises	Group presentation
12:30 – 14:00	Arrival	Lunch				
14:00 – 15:30		Hands-on exercises	Hands-on exercises	Excursion	Hands-on exercises	Group presentation
15:30 – 16:00		Coffee			Coffee	
16:00 – 18:30		Hands-on exercises	Hands-on exercises		Hands-on exercises	Departure
18:30 – 20:00	Dinner					
20:00 – 21:00	Welcome reception	Poster session	Careers talk	Tips and tricks on scientific writings	Poster session	

Lecture 1: Introduction to planetary atmospheres
Dr. Michael Zhang

Lecture 2: Characterising exoplanet atmospheres with transmission spectroscopy
Prof. Seth Redfield

Lecture 3: Emission spectroscopy, phase curves, and other methods
Dr. Michael Zhang

Lecture 4: Instrumentation in exoplanet atmosphere observations
Prof. Seth Redfield

Lecture 5: Introduction to atmospheric chemistry and climate
Dr. John Lee Grenfell

Lecture 6: Exoplanet atmospheric retrieval models
Dr. Anjali Piette

Lecture 7: Exoplanet atmosphere evolution
Dr. Anjali Piette

Lecture 8: Finding atmospheric signatures in the next decades, the LIFE mission
Dr. John Lee Grenfell

Hands-on session: Transmission spectroscopy of hot Jupiters, Phase-curve observations
Dr. Eva-Maria Ahrer, Cyril Gapp, Angelique Kahle, Dr. Elyar Sedaghati

Tips and tricks on scientific writings
Prof. Artie Hatzes