

## ASTRONOMY & SPACE SCIENCE CONFERENCE

**THEME:** Exploring the Potentials of Astronomy & Space Science in Ghana: Challenges, Progress, and Future Prospects for Sustainable Development

**AIM:** Give stakeholders in the field of space science/astronomy an opportunity to share insights and experiences, identify challenges and opportunities, and discuss strategies for advancing the development of space science/astronomy in Ghana especially through our academic systems.

### OUTLINE FOR TALKS (DAY 1)

Talks on Astronomy in Ghana & Africa, Radio Astronomy, Development in Africa through Radio Astronomy, Space science and satellites (CubeSats) and python programming (basics).

### OUTLINE FOR LAB SESSIONS (DAY 2 & 3)

Part 1 (Radio Astronomy) - Laboratory session: TTRT/Radio Telescopes

1. Introduction to Radio Astronomy
2. Introduction to TTRT (Radio telescopes)
3. Experimental/Hands-on aspect: Working with TTRT
4. Theoretical aspect: working with TTRT
5. Data visualizing: working with radio astronomy data (TTRT)

Part 2 (Space Science - satellites) - Laboratory session: Experimental satellites (CubeSats)

1. Introduction to Space science
2. Introduction to CubeSats/Experimental satellites
3. Experimental/Hands-on aspect: Working with CubeSats/Experimental satellites
4. Data visualizing: working with CubeSats/Experimental satellites

**Equipment for session:** 20 computers, 3 experimental satellites, projects, laser pointers etc.

**Relevant previous knowledge:** programming in python (jupyter notebook), radio astronomy and experimental satellites.

Table 1

Session	Duration	Description	Moderator	Venue
<b>General registration (Monday 30<sup>th</sup> Oct)</b>	From 8:00am to 8:00pm	Registration opens for all selected students and young professionals	Department of Physics team	Accommodation venue/Physics dept.
<b>DAY 1 (Tuesday 31<sup>st</sup> Oct)</b>				
Opening Ceremony – Talk by organizers	8:00-8:15am	All students	Department of Physics	Lecture theatre
Talk on Astronomy in Ghana	8:15-8:45am	All students	GSSTI	Lecture theatre
Q & A	15min	All students		
Talk on Astronomy in Africa	9:00-9:30am	All students	James - University of South Africa	Lecture theatre
Q & A	15min	All students		Lecture theatre
Talk on Development in Africa through Radio Astronomy (DARA)	9:45-10:15	All students	Melvin – University of Leeds	Lecture theatre

Q & A	15min	All students		
Talk on Space Science (areas, prospects, basic concepts etc.)	10:30-11:00am	All students	TUNSA	Lecture theatre
Q & A	15min	All students		Lecture theatre
Talk on Experimental satellites (CubeSats/miniature satellites)	11:15-11:45am	All students	WCRC-TSC Technologies	Lecture theatre
Q & A	15min	All students		
BREAK	12:00-1:00pm	All students		
Space science development in Ghana/Africa	1:00-1:30pm	All students	Xavier Space Solutions	Lecture theatre
Q & A	15min	All students		Lecture theatre
Working group discussions	1:45-3:00pm	All students	Department of Physics	Lecture theatre
Introduction to python programming (Basics)	3:00-4:00pm	All students	Department of Meteorology and Climate Science – Dr. Jeffrey Aryee	Lecture theatre
<b>DAY 2 (Wednesday 1<sup>st</sup> Nov)</b>				
Introduction to Radio Astronomy & building radio telescopes	8:00-9:00am	All students	James - University of South Africa	Laboratory
Q & A	15min	All students		
Introduction to TTRT (Radio telescopes)	9:15-10:15am	All students	GSSTI	Laboratory
Q & A	15min	All students		
Theoretical aspect: working with TTRT	10:30-11:30am	All students	GSSTI	Laboratory
Q & A	15min	All students		
BREAK	12:00-1:00pm	All students		
Experimental/Hands-on aspect: Working with TTRT	1:00-3:00pm	3 working groups	GSSTI	Laboratory
Data visualizing: working with radio astronomy data (TTRT)	3:00-4:00pm	3 working groups	GSSTI	Laboratory
<b>DAY 3 (Thursday 2<sup>nd</sup> Nov)</b>				
Cont.: Data visualizing: working with radio astronomy data (TTRT)	8:00-9:00am	3 working groups	GSSTI	Laboratory

Q & A	15min	3 working groups		
Introduction to Space Science - applications	9:15-10:15am	All students	Xavier Space Solutions	Laboratory
Introduction to CubeSats/Experimental satellites	10:15-11:15am	All students	Xavier Space Solutions	Laboratory
Q & A	15min	All students		
<b>BREAK</b>	12:00-1:00pm	All students		
Experimental/Hands-on aspect: Working with CubeSats/Experimental satellites	1:00-3:00pm	3 working groups	Xavier Space Solutions	Laboratory
Data visualizing: working with CubeSats/Experimental satellites	3:00-4:00pm	3 working groups	Xavier Space Solutions	Laboratory
Career development in Astronomy & Space Science (Interactive session)	4:00-4:30pm	All students	James - University of South Africa	Lecture theatre/ Laboratory
SGAC-themed session	4:30-5:00pm	All students	SGAC African Regional Coordinator & SGAC young professionals	Lecture theatre/ Laboratory
Closing ceremony/Networking	5:00-5:30pm	All students	K.N.U.S.T Physics department	Lecture theatre/ Laboratory
<b>END OF CONFERENCE</b>	<b>5:00pm</b>			