



SHARJAH ACADEMY FOR  
ASTRONOMY, SPACE SCIENCES  
AND TECHNOLOGY



أكاديمية الشارقة  
لعلوم وتكنولوجيا الفضاء  
والملاحة



## Invitation

SAASST and The Regional Center for Space Science and Technology Education for Western Asia-Jordan/ UN (RCSSTE) in Cooperation with Al al-Bayt University (AABU), and The Arab Union for Astronomy and Space Sciences (AUASS) are hosting,

Online workshop

# Binary and Multiple Stars: From Observations to Estimations

📅 Saturday and Sunday 18<sup>th</sup> and 19<sup>th</sup> July 2020

🕒 11:00<sup>am</sup> Abu Dhabi time

🗣️ ARABIC

Under the patronage of His Excellency **Prof. Hamid Al-Naimi**  
(Chancellor of the University of Sharjah, General Director of SAASST and President of AUASS)

Cooperation with

For More  information



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**Day 1: Saturday 18<sup>th</sup> July 2020**

To Login: <https://zoom.us/my/saasst>

**Zoom Login and Registration: to start at 10:30**

**Session No.1: Opening Session- Moderator: Prof. Mashhoor Al-Wardat**

Time	Talk	Speaker	Affiliation
11:00-11:10	Welcome speech	Prof. Hamid M. Al-Naimiy	Chancellor: UoS General Director: SAASST President: AUASS
11:10-11:20	RCSSTE speech	Dr. Awni M. Kasawneh	Director: RCSSTE Secretary-General: AUASS
11:20-11:30	AABU speech	Prof. Eqab Rabee	Vice Chancellor for Academic Affairs: AABU
11:30-11:45	Gaia Team	Prof. Martin Barstow	<b>Professor of Astrophysics:</b> School of Physics and Astronomy, University of Leicester. <b>Gaia Team</b> <b>Chair</b> , UK Space Agency Science Programme Advisory Committee. <b>Chair</b> , Space Telescope Institute Council <b>President</b> , Royal Astronomical Society (2014-2016)

**Session No.2: Prelude Moderator: Dr. Alaa Azzam**

Time	Title of the talk	Speaker	Affiliation
11:45-12:00	From Observations to Estimations	Prof. Mashhoor A. Al-Wardat	<b>Professor of Astrophysics,</b> Dep. of Applied Physics and Astronomy- UoS. <b>Academic Coordinator: SAASST</b>
12:00-12:20	A window to International Cooperation in Binary Stars	Dr. Ali A. Taani	<b>Associate Professor of Astrophysics,</b> Dep. of Physics Balqa Applied University - Jordan
12:20-12:45	Classification of Binary Stars	Prof. Hatem S. Widyan	<b>Professor of Astroparticles,</b> Dep. of Physics, Al al-Bayt University

Break (15 minutes)

Session No.3: X-Ray Binaries and Compact Objects Moderator: <b>Dr. Ali Taani</b>			
Time	Title of the talk	Speaker	Affiliation
13:00-13:30	Spectral Behavior of Some Black Hole Binary Systems	Dr. Hanna A. Sabat	<b>Assistant Professor of Astrophysics, RCSSTE</b>
13:30-14:00	High Mass X-ray Binaries: Vela X-1	Dr. Antonios Manousakis	<b>Assistant Professor of Astrophysics, Dep. of Applied Physics and Astronomy- UoS. Researcher: SAASST</b>
Session No. 4: Orbital Analysis – Moderator: <b>Dr. Antonios Manousakis</b>			
Time	Title of the talk	Speaker	Affiliation
14:00-14:30	Two-Body Problem (Theoretical background)	Prof. Hatem S. Widyan	<b>Professor of Astroparticles, Dep. of Physics, Al al-Bayt University</b>
14:30-14:45	Orbital Solution & Tokovinin's Dynamical Method [ORBITX code]	Mr. Abdullah Hussain	<b>M.Sc. St. Dep. of Physics, Al al-Bayt University</b>
14:45-15:00	Astrophysical data archives of binary Stars: The 4 <sup>th</sup> and 6 <sup>th</sup> Catalogues (Preparing input data)	Mr. Yamam Tawalbeh	<b>M.Sc. in Physics: Ministry of Education, Kuwait</b>
15:00-16:00	Solving Orbits (Each participant should choose a binary star and solve its orbit) – <b>Coordinator:</b> Prof. Mashhoor Al-Wardat		
End of the First Day			

**Day 2: Sunday 21<sup>st</sup> July 2019**

**Session No.5: Spectroscopic Analysis - Moderator: Prof. Husam El-Nasser**

Time	Title of the talk	Speaker	Affiliation
11:00-11:30	Al-Wardat's Method for Analyzing Close Visual Binary and Multiple Stars (CVBMSs): <b>The story</b>	Prof. Mashhoor A. Al-Wardat	<b>Professor of Astrophysics,</b> Dep. of Applied Physics and Astronomy- UoS. <b>Academic Coordinator:</b> SAASST
11:30-12:00	Ability of Al-Wardat's Method in Investigating Multiplicity of Stars	Ms. Zahra Yousef	<b>Ph.D. Student:</b> UKM Malaysia
12:00-12:15	Hipparcos Mission	Ms. Mai Al-Mashaqbeh	<b>M.Sc. St.</b> Dep. of Physics, Al al-Bayt University
12:15-12:30	Gaia Mission	Ms. Diala M. Taninneah	<b>M.Sc. St.</b> Dep. of Physics, Al al-Bayt University
12:30-12:45	Sixth Catalog of Orbits of Visual Binary Stars	Bayan Hammad	<b>M.Sc. St.</b> Dep. of Physics, Al al-Bayt University
12:45-13:00	Future Space Telescopes	Ms. Fatima Alkhateri	<b>SAASST</b>
13:00-13:30	Sharjah Observatory and its facilities	Mr. Moh'd Talafha	<b>M.Sc. in Physics</b> Researcher: SAASST
13:30-13:45	Observing Binary Stars Using Amateur Telescopes	Mr. Mohammad Aljady	<b>Amateur Astronomer:</b> Kuwait

Break: 15 minutes

Session No.6: Observations – Moderator: <b>Dr. Ahmad Abu-Shattal</b>			
Time	Title of the talk	Speaker	Affiliation
14:00-14:30	Primary Calculations and Input Parameters for Al-Wardat's Method	Ms. Enas Abu Alrob	<b>M.Sc. in Physics</b>
14:30-16:45	Applying Al-Wardat's Method for Analyzing Selected Close Visual Binary and Multiple Stars (CVBMSs)- <b>Coordinator: Mr. Abdallah Hussein</b> (Each participant should choose a binary star and solve its orbit) <ul style="list-style-type: none"> <li>- Installing software</li> <li>- Collecting data</li> <li>- Calculating input parameters</li> <li>- Applying the method</li> <li>- Plotting results</li> </ul>		
<b>Break: 15 Minutes</b>			
Session No.7: Workshop's Guests - Moderator: <b>Prof. Mashhoor Al-Wardat</b>			
Time	Title of the talk	Speaker	Affiliation
17:00-18:00	Data reduction with PyRAF	Dr. Moh'd Mardini	<b>Ph.D. in Astrophysics</b>
18:00-18:30	Orbit Calculation	Prof. Andrei Tokovinin	<b>Prof. of Astrophysics (DrSci)</b> Cerro Tololo Inter-American Observatory CTIO/AURA, Chile
18:30-19:00	Open Discussion and Closing Remarks	Prof. Mashhoor A. Al-Wardat	<b>Professor of Astrophysics,</b> Dep. of Applied Physics and Astronomy- UoS. <b>Academic Coordinator:</b> SAASST
<b>End of the Workshop</b>			