PERSONAL INFORMATION

Mashhoor Ahmad Salameh ALWARDAT

مشهور احمد سلامه الوردات

Department of Applied Physics and Astronomy, Building M7, University of Sharjah, P. O. Box 27272 Sharjah, UAE

> 60 articles at ADS-NASA

malwardat@sharjah.ac.ae, mwardat@aabu.edu.jo, mwardat@yahoo.com

Profile at DAPA-UOS Skype: mwardat

Sex Male | Date of birth 05 Oct. 1970 | Nationality Jordanian

IAU Active member since 2018; Deputy Chair of Arab **OAD Office** – Amman, Jordan

Financial Secretary of the Arab Union for Astronomy and Space Sciences AUASS

WORK EXPERIENCE

Position	Institute	from	to
Professor	Dept. of Applied Physics, University of Sharjah, Shj, UAE	1st Sep. 2019	date
Director of the Dep. of Academic Affairs - SAASST	Sharjah Academy for Astronomy, Space Sciences and Tech.	1st Jan. 2023	date
Professor	Department of physics/ Al al-Bayt University/ Jordan	13th Sep. 2015	1st Sep. 2019
Professor	Dept. of Applied Physics, University of Sharjah, Shj, UAE	1st Sep. 2014	1st Sep. 2015
Dean	Faculty of Science/ Al-Hussein Bin Talal University/ Jordan	9th Sep. 2012	31st Aug. 2014
Professorship	Promoted at Al-Hussein Bin Talal University/ Jordanc on 24th June 2014		
Visiting Astronomer	Ramon Maria Aller Observatory, University of Santiago de Compostela, Spain. Grant from ERASMUS-MUNDUS Program.	10th Jan. 2014	10th Feb. 2014
Associate professor	Department of physics/ Al-Hussein Bin Talal University/ Jordan	9th Sep. 2012	24th June 2014
Associate professor (Visitor)	Department of physics/ Yarmouk University/ Jordan	23 Jan. 2011	8th Sep. 2012
Visiting Astronomer	**Max Planck Institute for Astrophysics-Munich/ Germany**	25 May 2011	22 Aug. 2011
Associate professorship	Promoted at Al-Hussein Bin Talal University/ Jordan on 24th June 2010.		
Chairman	Department of physics/ Al-Hussein Bin Talal University	1st Sep. 2009	23 Jan. 2011
Visiting Astronomer	**Max Planck Institute for Astrophysics-Munich/ Germany**	14 Jun 2009	12 Sep. 2009
Assistant professor	Department of physics/ Al-Hussein Bin Talal University/ Jordan	11 Sep. 2005	23 June 2010
Post-Doc.	**Department of theoretical physics of Cosmo/ University of Granada/ Spain**	10 Feb. 2008	20 Sep. 2008
Full time lecturer	Department of physics/ Al-Hussein Bin Talal University/ Jordan	20 Feb 2005	10 Sep 2005
Teacher	Secondary Schools (Ministry of Education/ UAE)	17 Sep. 2004	29 Jan. 2005
Research Assistant	Special Astrophysical Observatory of the Russian Academy of Sciences, Russian Federation	15 Mar. 2001	5 Dec. 2003
Visiting Astronomer	Max Planck Institute for Radio Astronomy-Bonn/ Germany	14 Jun 2000	24 Aug. 2000
Teacher	Secondary Schools (Ministry of Education/ Jordan)	3 Nov. 1992	14 Mar. 2001

EDUCATION AND TRAINING

Degree	Institute and its address	Specialization	Cumulative Average	Period of study	Date of graduation	Notes
Secondary Edu.	Atturah Secondary School, Attura, Jordan	Scientific Stream	88.9%	2 years	July 1988	
B.Sc.	Yarmouk University Irbid, Jordan	Physics	71.2%	4 years	9 June 1992	Scholarship From MHE
M.Sc.	Institute of Astronomy and Space Sciences, Al al-Bayt University Mafraq, Jordan	Astronomy	83.37%	3 years	1 July 1997	First Rank
Ph.D.	Special Astrophysical Observatory of the Russian Academy of Sciences, Nizhnij Arkhyz K-Ch Russian Federation 369167	Astrophysics	-----	3 years	6 Feb. 2004	Grant from the Russian Academy of Sciences
Post-Doc.	**Department of theoretical physics of Cosmo/ University of Granada/ Spain**	Astrophysics	------	8 mths	Sep. 2008	Funded by ERASMUS Mundus
Post-Doc.	**Max Planck Institute for Astrophysics-Munich/ Germany**	Astrophysics	------	6 mths	2009 and. 2011	Funded by DFG

Title of M.Sc. Thesis	New physical and geometrical elements of a few x-ray binary stars.
Title of Ph.D. dissertation	Interferometry and spectrophotometry of solar type binary stars.

PERSONAL SKILLS

Mother tongue(s): Arabic

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C1	C2
	Language of instruction of home institute				
German	A1	A1	A1	A1	A1
	GOETHE-INSTITUT: G I a-c				

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

- Good communication skills gained through my experience as a student and visitor at different scientific institutions.

Organisational / managerial skills

- Dean, Faculty of Science/ Al-Hussein Bin Talal University/ Jordan (2012-2014)
- Chairman, Dep. of Physics, Faculty of Science/ Al-Hussein Bin Talal University/ Jordan (2009-2011)

Computer skills	• Windows and Linux operating systems. • Network connections. • Astronomical data processing (IDL, MIDAS, IRAF and other special programs). • Other programs like Origin, Latex and Bibtex, CorelDraw, Mendeley, Zotero, Endnote and others.
Driving Licence	▪ B (All kinds of light cars) (Issued in Jordan and UAE).
Scuba Diving Licence	▪ 18 meters

ADDITIONAL INFORMATION

Scientific and research interests:

- Developing the techniques and codes of "Al-Wardat's Method for analyzing binary and multiple stellar systems".
- Spectrophotometry of stars.
- Interferometry of binary and multiple stellar systems.
- Atmospheric modelling of binary and multiple stellar systems.
- Orbits of close visual binary and multiple stellar systems.
- Light curves of eclipsing X-ray binary stars.
- Astronomical site selection and testing.
- History of Astronomy.

Funded scientific research:

- PI of the Planetary Sciences Research Group, University of Sharjah, since 2021.
- A Field Study for the Selection of the Optimal Astronomical Site in the Hashemite Kingdom of Jordan. Funded by **Scientific Research Support Fund/ Jordan** under the number Bas/2/05/20122 -2012, with the amount of **123418JD=173800US$** (in cooperation with a research team).

Supervision of Ph.D. Students:

- Zahraa Al-Qadri, **Physical and geometrical parameters of some close visual subgiant binary stars**, Malaysia, Co-supervisor with Dr. Adlyka Annuar and Dr. Nurul Shazana Abdul Hamid, Department of Applied Physics, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 UKM, Bangi, Selangor, **Malaysia**; adlyka@ukm.edu.my (Finished her Ph.D. in 2023).
- Suhail Masda, **Pre-main Sequence Subgiant Stars, Spectrophotometry of stars**, Co-supervisor with Prof. Pathan J. M., Physics Department, Maulana Azad College, Aurangabad-431001, Maharashtra, India, **(Finished his Ph.D. in 2021)**.
- Hatem Abdullah AL-Ameryeen, **The Evolution of Optical Instrumentation in Astronomy and Vision Science: Advanced Scientific Thought and the History and Development of Astronomical Research in Arab Countries**, with Prof. Docobo at *Ramon Maria Aller Observatory, University of Santiago de Compostela, Santiago de Compostela, Spain,* **(Finished his Ph.D. in 2020)**.
- Ahmad Abu-Shattal: **Physical Properties and Dynamical Elements of the Spectroscopic Binary Stars**, Co-supervisor with Prof. Docobo at *Ramon Maria Aller Observatory, University of Santiago de Compostela, Santiago de Compostela, Spain*, **(Finished his Ph.D. in 2017)**

Supervision of M. Sc. Students: **More than 30 master students at the following Universities: University of Sharjah, Yarmouk University, Jordan University of Science and Technology, Mut'ah University and Al al-Bayt University.**

Member of the examination committees of several M. Sc. Theses.

Courses I taught:

Undergraduate:
• Remedial Physics (Phys. 099) • Introduction to Astronomy (Phys 100) • Astronomy and Space Sciences (1430101) • General Physics I &II (Phys. 101, Phys.102) • Physics for Medical Sciences (JUST Uni. Phy. 103) • General Physics Labs. (Phys. 103, Phys.104) • Mathematical Physics I (Phys. 201) • Optics I&II (Phys. 272, Phys.471) • Optics Lab. (Phys. 273) (I assembled all experiments) • Heat and Waves (Phys 274) • Thermodynamics • Classical Mechanics I,II (Phys. 311, Phy.312) • E&M I, II (Phys. 332 & Phys. 333) • Advanced Modern Physics (Phys. 252) • Advanced Physics Lab. (Phys. 405) (I assembled all experiments and prepared the lab sheets) • Astrophysics (Phys. 304) • Climate and Meteorology (Phys. 302)
Graduate
• Classical Mechanics (Phys. 611) at Yarmouk University and Al al-Bayt University. • Special Topics (Phys. 691) at Yarmouk University and Al al-Bayt University. • Modern Research Methodology in Physics (701) at Al al-Bayt University. • Stellar Astrophysics (1430501) at the University of Sharjah. • Planetary Science (1430502) at the University of Sharjah. • Celestial Mechanics (1430507) at the University of Sharjah. • Research Methodology (1430603) at the University of Sharjah.

Observational nights:

- Sharjah Optical Observatory, 17" CDK, continuous observations, photometry, wide range spectrophotometry using DADOS spectrograph and high-resolution spectroscopy using the compact BACHES Echelle Spectrograph.
- Calar Alto Observatory- Spain
- 6-meter BTA telescope at SAO-Russia. More than 40 nights using Speckle Interferometer.
- 1-meter Zeiss telescope at SAO-Russia. More than 60 nights using Spectrophotometer.

Honors and Awards:

Fellowship for Bachelor studies.	Ministry of Higher education, Jordan 1988
Breastplate of university activity	Yarmouk University/ Jordan, 1992
Award of scientific innovation	Ministry of Education/ Jordan, 1997
Award of academic excellence in the master program from king Abdullah	Al al-Bayt University/ Jordan, 1999
Fellowship for Ph.D. research.	SAO of the Russian Academy of Sciences, 2003
ERASMUS Mundus fellowship for post-doctoral research. (9 months)	Department of theoretical physics of Cosmo/ University of Granada/ Spain, 2008
DFG German research fellowship (6 months)	Max-Planck-Institute for Astrophysics, Munich, 2009, 2011
Prize of the Distinguished Scientific Research in the field of basic sciences 2012	**Scientific Research support Fund (SRSF), Jordan**

Membership of professional organizations:

- IAU Active member since 2018 (https://www.iau.org/administration/membership/individual/17700/)
- Jordanian Astronomical Society from 1996 to 2021.
- Arab Union of Astronomy and Space Sciences since 2003
- Financial Secretary of the Arab Union for Astronomy and Space Sciences AUASS
- Deputy Chair of Arab **OAD Office** – Amman, Jordan

Teaching goals and philosophy:

- **Empowering Future Scientists:** My main objective is to nurture a new generation of scientists who not only understand new developments and discoveries but also feel inspired to pursue them with curiosity and confidence.
- **Inspiring a Love for Science:** I strongly believe in instilling a genuine passion for science and scientific inquiry in my students. Through engaging and interactive lessons, I aim to ignite their interest and encourage them to explore the wonders of the scientific world.
- **Fostering Connection:** Building a strong and supportive relationship between teacher and student is crucial. I strive to create an open and communicative environment where students feel comfortable sharing their ideas and asking questions.
- **Sharing Knowledge and Experience:** I am dedicated to passing on my knowledge and experiences to my students. By sharing real-world applications of scientific concepts and providing mentorship, I hope to prepare them not just for exams, but for a lifelong journey in science.

Public Lectures:

- Since I joined University of Sharja in Sep. 2019, **I have a regular participation in public lectures**, either face-to-face or online. As an example, I gave several lectures at Dubai EXPO 2020, ALSERKAL, Teachers Training Institute- Ajman, ... etc. This is in addition to **several TV interviews** at Sharjah TV, Al-Dhafra TV, AL Fujairah TV, Al-Arabiya TV, BBC Arabia, and others.
- Lectures and observational nights at different schools and mosques in Jordan, 1996-2019
- Invited lecturer by the Jordanian Physicists society at Princess Sumaya University for Technology, 15th Dec. 2016
- Lecture at the Astrophysikalisches Institut und universitäts- Sternwarte, FRIEDRICH-SCHILLER-UNI, Jena, Germany, Aug.2013
- Lectures about crescent observation at different mosques in Irbid and Ma'an, Jordan, 2012.
- Lectures at the Center for theoretical and applied physical sciences, Yarmouk University, April 2011.
- Lecture at The Latin Patriarchacte Secondary School, Al-Hussun, April 2011.
- Lecture at Max Planck Institute for Astrophysics-Munich/ Germany, July 2009.
- Lecture at Al-Eskan Secondary School for girls, Ma'an, March 2009.
- Lecture at Tafilah Technical University, Dec. 2008.
- Lecture at the Andalucian Institute of Astrophysics (IAA)- Spain, 2008.
- Lecture at Ministry of Education- Ma'an, April 2007.
- Lecture at Ministry of Education- Wadi Mousa, Taiba, April 2006.
- Lectures at Beirut University, Lebanon, July 2005.
- Lecture at Zarqa National University, July 2004.
- Lectures at the Jordanian Astronomical Society, 2004.
- Lecture at Fiqeh Department, Yarmouk University, April 2004.
- Lectures at the SAO of the Russian Academy of Sciences, Russia, 2001, 2002, 2003.
- Lecture at Max Planck Institute for Radio Astronomy-Bonn/ Germany, July 2000.
- Lectures at Al al-Bayt University, 1997, 1998 2003.
- Lectures, Min. of Edu. Ramtha Directorate,1996,97, 98.

Astronomical Camps:

- Crescent monotoring campaigns each year.
- Partial Solar Eclipse, Ajloun, Jordan, 2018
- Venus transit observation, Yarmouk University, Irbid, Jordan- Jun 2012.
- Observing the sky and focusing on Saturn, AHU, April 29, 2009
- Solar eclipse observation, AHU, 29 March 2006.
- Venus transit observational camp, Hamza Astronomical Camp, Azraq, Jordan- Jun 2004.
- Seventh observational workshop, Zarqa National University, 26 July 2004.

- The Perseid Meteor Shower observational camp, Hamza Astronomical Camp, Azraq, Jordan- 9-12 Aug. 2004.
- The Third Arabian Astronomical Camp of Youth, Raqqa, Syria, 8-12 Sep. 2004.

Books:

- M. A. Al-Wardat, *Stellar Astrophysics*, (in Arabic language), publications of the University of Sharjah, No.208, 2023.
- مشهور احمد الوردات، الفيزياء الفلكية النجمية، منشورات جامعة الشارقة، رقم 208، 2023م
- Atmospheric Physics and Meteorology (in Arabic- in preperation).
- Classical Mechanics, in cooperation with other colleagues, (in preparation).
- Three body problem and its astronomical applications (in Arabic- in preperation).

References: available upon request

Conferences and Workshops (Most recent to least recent):

1. Mashhoor Al-Wardat, 5 papers, **The 4th Conference of Arab Union for Astronomy and Space Sciences**, University of Sharjah, 13-16 Nov. 2023. (Also coordinator of the Scientific Committee)

2. Mashhoor Al-Wardat, *Three papers,* **The International Conference "The Heavens in the Light of the Verses of the Qur'an and Scientific Data"** المؤتمر العالمي: السماوات في ضوء آيات القرآن والمعطيات العلمية, Turkish Supreme Council for Religious Affairs, 8-10 May 2023, Ankara, Turkey.

3. Mashhoor Al-Wardat, Mohammad Musharraf Azmi, Abdallah M. Hussein and Mohammad F. Talafha, *Complete Analysis of Subgiant Stellar Systems I: HIP 7580***, The International Conference and Exhibition for Science (ICES2023),** 06-08 Feb. 2023, RIYADH, Saudi Arabia.

4. Mashhoor Al-Wardat, Razan Alkaabi and Suhail Masda, *Complete Analysis of Subgiant Stellar Systems II: HIP 113166***, The International Conference and Exhibition for Science (ICES2023),** 06-08 Feb. 2023, RIYADH, Saudi Arabia.

5. Enas M. Abu-Alrob, Ammar Eissa Mohammed Abdulla, Zahra T. Yousef and Mashhoor A. Al-Wardat, *Complete Analysis of Subgiant Stellar Systems III: HIP 24902***, The International Conference and Exhibition for Science (ICES2023),** 06-08 Feb. 2023, RIYADH, Saudi Arabia.

6. Mohammad Fadil Talafha, Mashhoor Ahmad Al-Wardat, Salem Abdelrahman Shuhail and Hamid M. Al-Naimiy, *Transiting Exoplanets from Sharjah Optical Observatory I: the Three Exoplanets HAT-P-9 b, TrES-5 b, and WASP-43 b***, The International Conference and Exhibition for Science (ICES2023),** 06-08 Feb. 2023, RIYADH, Saudi Arabia.

7. Mashhoor Al-Wardat, Razan Alkaabi and Suhail Masda, *Complete Analysis of Subgiant Stellar Systems II: HIP 113166***, The International Conference and Exhibition for Science (ICES2023),** 06-08 Feb. 2023, RIYADH, Saudi Arabia.

8. *Space Explorations: Parallax Measurements from Hipparcos to Gaia***, Asia-Pacific Space Cooperation Organization (APSCO) and Arab Union for Astronomy and Space Sciences (AUASS) Meeting,** 2-4 November 2022, Jordan

9. Al-Wardat's Method for Analyzing Binary and Multiple Stellar Systems, **FM09-IAUGA 2022**, 2-11 Aug. 2022, Busan, South Korea**.**

10. Astrometry From Hipparcos to Gaia: Parallax Discrepancy, **FM07-IAUGA 2022**, 2-11 Aug. 2022, Busan, South Korea**.**

11. *Gaia vs Hipparcos: the Accuracy of Parallax Measurements*, The Multifaceted Universe: Theory and Observations – 2022, 23-27 May 2022, SAO RAS, Nizhny Arkhyz, RUSSIA**.**

12. An invited speaker with a talk entitled "***Who first introduced the heliocentric model? Ibn al-Shatir or Copernicus?***" at SIFHAMS International Winter School for Graduate Students, A school organized by the University of Sharjah and Sharjah International Foundation for the History of Arab and Muslim Sciences (SIFHAMS), **[9th – 16th Jan. 2022]**

13. The 4th International Conference on Arabs' and Muslims' History of Sciences (ICHS21) " Scientific Legacy and its Contemporary Impacts " A virtual Conference organized by the University of Sharjah and Sharjah International Foundation for the History of Arab and Muslim Sciences (SIFHAMS), **April 4-6, 2021** https://www.sharjah.ac.ae/ar/Media/Conferences/ICHS21/Pages/default.aspx

14. MEARIM 2020: Fifth Middle-East and Africa Regional IAU Meeting - VIRTUAL MEETING jointly hosted by The Regional Center for Space Science and Technology Education for Western Asia / United Nations, and Arab Union for Astronomy and Space Sciences (AUASS), Amman-Jordan, **10-12 Nov. 2020**,. http://mearim.rcsstewa.com/

15. Coordinator and main speaker; Online Workshop: "Binary and Multiple Stars: From Observations to Estimations", Organized by: SAASST and DAPA- University of Sharjah, with around 200 participants, 18-19 July 2020.

16. Lecturer and coordinator of two workshops at: **The third school subject forum for teachers, under the logo: Inspires -** Ministry of Education - Teacher Training Institute - Ajman - United Arab Emirates, 5-9 Jan 2020.

17. Organizer and Lecturer**; Workshop on Space Sciences Education Research in the Middle East,** Sharjah Academy for Astronomy and Space Sciences (SAASST), UAE, 28 and 29 Oct. 2019.

18. Lecturer**; United Nations - Jordan Workshop: Global Partnership in Space Exploration and Innovation, Amman, Jordan 25-28 March 2019**

19. Nucleosynthesis Between Theory and Observations: The Reaction Rates of Fluorine 19 (19F) in Stars**, The First Sharjah International Conference on Particle Physics, Astrophysics and Cosmology (FISICPAC), 11-13 Nov. 2018, University of Sharjah, Sharjah, UAE.**

20. *Nuclear Security;* **INSEN Curriculum Development Next Steps Workshop, July 09-13, 2018, Vienna, Austria.**

21. Regional Centre for Space Science and Technology Education for Western Asia /UN (RCSSTEWA), **The 12th Arab Conference on Astronomy and Space Sciences, 1-3 May, 2018, Amman, Jordan**

22. Al-Sufi's Book of Fixed Stars; Bridging Greek, Arabic and Modern Stellar Names (some examples of his work)**, The 3rd International Conference on Arabs' and Muslims' History of Science (ICHS 17), 8-5-7 Dec. 2017, University of Sharjah, Sharjah, UAE.**

23. **ISNET/RJGC Workshop on CUBESAT TECHNOLOGIES Its Design and Development, 15 – 19 October 2017, Amman, Jordan**

24. **5th Global Space and Satellite Forum, 26 - 27 May 2015, ADNEC, Abu Dhabi, UAE**

25. An Eye on Subgiant Stars**, 2nd International Conference on Arabs' and Muslims' History of Science, 8-11 Dec. 2014, University of Sharjah, Sharjah, UAE.**

26. The effect of the book "Al-Urjozah كتاب الأرجوزة في الكواكب الثابتة" in keeping the stars' Arabic names; **The 7th Conference of Arab Experts on Geographical Names; 11-13 Nov. 2014, Amman, Jordan**

27. *Nuclear Security;* **INSEN Curriculum Development Next Steps Workshop, August 11-12, 2014, Vienna, Austria.**

28. *Nuclear Security (PNS) Curriculum Development Workshop* ***"Sharing and Applying Best Practices."*** *15th* – 19th Nov. 2013. Khalifa University of Science Technology and Research (KUSTAR) Abu Dhabi, United Arab Emirates.

29. Estimating Physical and Geometrical parameters of Binary Stars; **The 6th Islamic Astronomical conference; 24-27 September 2013, Amman, Jordan**
30. *The SESAME Users' Meeting 2012***, Organized by the Jordanian Committee for SESAME, 7-9 Nov. 2012, Amman, Jordan**

31. *Atmospheric modeling of the spectroscopic binary system Hip17491,* **The 10th Arab Conference on Astronomy and Space Sciences, 5-8 Feb 2012, Muscat, Oman**

32. *A Method for Estimating Parallaxes of VCBS: Modification to Hipparcos Parallax Measurements,* **3rd Galileo-Xu Guangqi Meeting, October 11-15, 2011.**

33. *Modifications to Calendars and Hijric Calendar,* **5th Islamic Astronomy, The World Islamic Science & Education University**, (Amman, Jordan; 22 -24 , March , 2011).

34. *Spectrophotometry (invited speaker),* **2nd Lebanese Summer School on Astronomy: Spectroscopy in Astrophysics, Notre dam University,** (Beirut, Lebanon; 23-30 July 2010).

35. *The Complex Study of Visually Close Binary Systems (VCBS) "The case of Hip4809, a modification to its Hipparcos parallax measurement,* **The 9th Arab Astronomical Conference,** (Burj Al-Fateh, Khartoom, Sudan, 17-19 November 2009)

36. Carbon Stars, *the research keys*, **First Lebanese Astrophysics Meeting '09: From Stars to Galaxies,** 14-17 April 2009, American University of Beirut, Lebanon.

37. Atmospheric Modeling of the Stellar Binary System 9Cyg, **International Conference On Modeling And Simulation (Ms'08)** 11-13 Nov. 2008, Petra, Jordan.

38. **Calar Alto Instrumentation Workshop Program,** Andalucian Institute of Astrophysics (IAA), Granada, Spain, 11-13 June 2008.

39. **ARENA workshop on Spectroscopy on Dome C:** "From UV to sub-millimetric wavelengths", University of Granada, Granada, Spain, 16-18 April 2008.

40. A method for estimating model atmosphere parameters of the components of binary systems, **The 8th Arab Conference of Astronomy and Space Sciences.** (Djerba, Tunis, 19-23 March 2007)

41. *Complex study of binary stars (invited speaker),* **Summer School on Astronomy: Site Testing, Concepts and Techniques, Notre dam University,** (Beirut, Lebanon; 5-15 Sep 2005).

42. *Speckle interferometry,* **The 7th Arab Conference on Physics and Astronomy (7th ACOPA), (The 5th AUASS Conference), Al al-Bayt University (AABU), Princess Sumayya University for Technology (PSUT),** (Mafraq and Amman, Jordan, 15-17 August 2005)

43. *.Adaptive optics (theory and applications) (invited speaker),* Week of Astrophysics at **University of Damascus**, (Damascus, Syria; 18-22 April 2004).

44. **Estimations and control problems in adaptive optics,** Workshop held at the **Institute. For Pure & Applied Mathematics-University of California Los Angeles**, (Los Angeles, USA; 22-24 January 2004).

45. **Mathematical challenges in astronomical optics,** Workshop held at the **Institute . For Pure & Applied Mathematics-University of California Los Angeles**, (Los Angeles, USA; 26-30 January 2004).

46. *Spectral energy distributions and model atmosphere parameters of the quadruple system ADS11061*, **The 5th Arab Astronomical Conference & the 3rd Conference for AUASS** (Amman, Jordan; 19 - 22 August 2002).

47. *Speckle Interferometry with the Russian 6-meter Telescope,* **The 5th Arab Astronomical Conference & the 3rd Conference for AUASS** (Amman, Jordan; 19 - 22 August 2002).

48. *Spectroscopic and speckle-interferometric observations of the multiple systems ADS11061*, **Astroecho-2002** (Terskol, Kapardinia-Balkaria, Russia; 12-16 August 2002).

49. *The Complex Study of the Quadruple System ADS11061*, **IAU Symposium No. 210 Modeling of Stellar Atmospheres** (Uppsala, Sweden; 17-21 June 2002).

50. *The system 41 Draconis: approaching priastron on 2001*, **All-Russian Astronomical Conference** (Saint Petersburg; 6 - 12 August 2001).

51. *Eclipsing X-ray binary systems*, **The eighth UN/ESA workshop on basic space sciences "Scientific exploration from space", Al al-Bayt University** (Mafraq, Jordan; 13- 17 March 1999).

52. *Estimation of physical and geometrical properties of eclipsing X-ray binary systems*, **First International Conference in Astronomy and Space Sciences**, **Al al-Bayt University** (Mafraq, Jordan; 4- 6 May 1998).

53. *New physical and geometrical properties of some eclipsing X-ray binary systems*, **The Second Arab Astronomical Conference** (Amman, Jordan; 8 - 10 September 1997).

List of publications (Most recent to least recent):
SAO/NASA Astrophysics Data System (ADS)
http://adsabs.harvard.edu/

1. Ahmad A. Abushattal, **Mashhoor A. Al-Wardat**, Elliott P. Horch, Nikolaos Georgakarakos, Hatem A. Al-Ameryeen, Enas M. Abu-Alrob, Abdallah M. Hussein, The 24 Aqr triple system: A closer look at its unique high-eccentricity hierarchical architecture, Advances in Space Research (AISR), **Volume 73, Issue 1, 1 January 2024, Pages 1170-1184**, (https://doi.org/10.1016/j.asr.2023.10.044), **A Q1 SCOPUS Journal with CiteScore 5.0, Impact Factor** 2022**: 2.611**

2. Abdallah M. Hussein, Enas M. Abu-Alrob, Mohammad K. Mardini, Motasem J. Alslaihat, **Mashhoor A. Al-Wardat**, Complete analysis of the subgiant stellar system: HIP 102029 h, Advances in Space Research (AISR), **Volume 73, Issue 1, 1 January 2024, Pages 1103-1112**, (https://doi.org/10.1016/j.asr.2023.07.045), **A Q1 SCOPUS Journal with CiteScore 5.0, Impact Factor** 2022**: 2.611**

3. Suhail Masda, Zahraa. T. Yousef, **Mashhoor A. Al-Wardat**, and Awni M. Khasawneh, Modified Masses and Parallaxes of Close Binary Systems: HD 39438, Research in Astronomy and Astrophysics (RAA) 23:115005 (7pp), **Volume 23, Number 11, 2023**, (https://iopscience.iop.org/article/10.1088/1674-4527/ace51b), **A Q2 SJR, A SCOPUS Journal with CiteScore 2.8, Impact Factor** 2021**: 1.8**

4. Suhail Masda, and **Mashhoor A. Al-Wardat**, Modified orbital parameters, masses and parallaxes for the two close binary stars HD 200325 and HD 220077, Advances in Space Research (AISR), **Volume 72, Issue 2, 15 July 2023, Pages 649-663,** (https://doi.org/10.1016/j.asr.2023.02.047), **A Q1 SCOPUS Journal with CiteScore 5.0, Impact Factor** 2022**: 2.611**

5. Mohammad Sh. Odeh, **Mashhoor A. Al-Wardat**, and Peter Jenniskens, New showers identified among meteors observed in the UAE, Experimental Astronomy, **2023**, (https://link.springer.com/article/10.1007/s10686-023-09908-6), **A Q2 SCOPUS Springer Journal with CiteScore 3.6, Impact Factor** 2022**: 3.00**

6. Z. T. Yousef, A. Annuar, **Mashhoor A. Al-Wardat**, and N. S. A. Hamid, The True Nature of the Brightest Local Triple Stellar Candidates Within 100 Parsec in the Galaxy, Astronomical Journal (AJ), **2023**, Vol. 165 No. 256 **Q1 Journal, Impact Factor** 2023**: 5.491**

7. Enas Abu-Alrob, Abdallah M. Hussein, **Mashhoor A. Al-Wardat**, Atmospheric and Fundamental Parameters of the Individual Components of Multiple Stellar Systems, Astronomical Journal (AJ), **2023**, Vol. 165, Issue No. **6**. (https://doi.org/10.3847/1538-3881/acc9ab) **A Q1 Journal, Impact Factor** 2023**: 5.491**

8. Abdallah M. Hussein, Enas M. Abu-Alrob, Fatima M. Alkhateri, **Mashhoor A. Al-Wardat**, Atmospheric parameters of individual components of the visual triple stellar system HIP 32475, Proceedings IAU Focus Meeting FM09, 2022, Busan, Korea.(2304.03604.pdf (arxiv.org)).

9. Mohammad Sh. Odeh, and **Mashhoor A. Al-Wardat**, Observation of Three Variable Stars and an Asteroid Using Small Telescopes in the United Arab Emirates (UAE), J. Astron. Space Sci. 2023; 40(1):19-27. (DOI: https://doi.org/10.5140/JASS.2023.40.1.19), **A Q4 SCOPUS Journal, Impact Factor**

10. Diala M. Tanineah, Abdallah M. Hussein, Hatem Widyan, and **Mashhoor A. Al-Wardat**, *Trigonometric Parallax Discrepancies in Space Telescopes Measurements I: The Case of the Stellar Binary system Hip 84976*, Advances in Space Research (AISR), **2022**, (https://doi.org/10.1016/j.asr.2022.09.025), **A Q1 SCOPUS Journal, Impact Factor** 2022**: 2.611**

11. **Mashhoor A. Al-Wardat**, Abdallah M. Hussein and Enas Abu-Alrob, *Gaia vs Hipparcos: the Accuracy of Parallax Measurements*, The Multifaceted Universe: Theory and Observations - 2022 (MUTO2022), Proceedings of Science, **2022**, MUTO2022-010, **A SCOPUS Journal**

12. Anas Abu-Duhaim, Ali A. Taani, Diala M. Tanineah, N. Tamimi, Mohammad K. Mardini, and **Mashhoor A. Al-Wardat**, *Studying the Physical Parameters of the Stellar Binary System Hip 42455 (HD 73900)*, ACTA ASTRONOMICA, Vol. **72**, **2022**, accepted, **A Q2 SCOPUS Journal, Impact Factor** 2022**: 2.477**

13. M.F. Talafha, A.E.M. Abdulla, M.M. Azmi, H.M. Al-Naimiy and **Mashhoor A. Al-Wardat**, *Sharjah Lunar Impact Observatory (SLIO)*, Journal of Instrumentation, Volume 17, Issue 04, id.T04008, 13 pp. 2022, (https://iopscience.iop.org/article/10.1088/1748-0221/17/04/T04008) **A Q2 Journal, Impact Factor** 2020**: 1.145**

14. A. M. Hussein, **Mashhoor A. Al-Wardat**, Ahmad A. Abushattal , Widyan H. S., Abu-Alrob Enas, Oleg Malkov, and M. A. Barstow, Atmospheric and Fundamental Parameters of Eight Nearby Multiple Stars, Astronomical Journal (AJ), **2022**, Vol. 163, Issue No. **4**.(https://doi.org/10.3847/1538-3881/ac4fc7) **A Q1 Journal, Impact Factor** 2021**: 6.263**

15. Almusleh, Nour Aldein; Taani, Ali; Özdemir, Sergen; Rah, Maria; **Al-Wardat, Mashhoor A.**; Zhao, Gang; Mardini, Mohammad K., Metal-poor Stars Observed with the Automated Planet Finder Telescope. III. CEMP-no Stars are the Descendant of Population III Stars, Astronomische Nachrichten (Astronomical Notes), **2021**, Vol. 342, No. 4, pp. 625-632. © Wiley-VCH GmbH, Weinheim. https://doi.org/10.1002/asna.202113867, **Impact Factor 2020: 1.064**

16. **Mashhoor A. Al-Wardat**, Abu-Alrob E., A. M. Hussein, Mardini M., Taani A. A., Widyan H. S., Yousef Z. T., Al-Naimiy H. M. and Yusuf N. A. H., Physical and geometrical parameters of CVBS XIV: The two nearby systems HIP 19206 and HIP 84425, Research in Astronomy and Astrophysics (RAA), **2021**, Vol. 21, No. 7, 161 (9 pp). **Impact Factor 2019: 1.512**

17. **M. A. Al-Wardat,** A. M. Hussein, H. M. Al-Naimiy and M. A. Barstow, **Comparison of Gaia and Hipparcos parallaxes of close visual binary stars and the impact on determinations of their masses**, *Publications of the Astronomical Society of Australia* (PASA), **2021**, Vol. 38, e002, (**A Q1 Journal with IF 5.571 and a Cite Score = 11.7**).

18. Z. T. Yousef, A. Annuar, A. M. Hussein, H. M. Al-Naimiy, **M. A. Al-Wardat**, N.S. A. Hamid, M. F. Talafha, The

Stellar System HIP 101227: Is it a Binary, a Triple or a Quadruple System?, Research in Astronomy and Astrophysics (RAA), **2021**, Vol. 21, No. 5, 119 (9pp) **Impact Factor 2019: 1.512**

19. Yamam M. Al-Tawalbeh, Abdallah M. Hussein, Fadi A. Suleiman, Ali A. Taani, Ahmad A. Abushattal, Nihad A. Yusuf, Mohammad K. Mardini, Hamid M. Al-Naimiy, Awni M. Khasawneh and **Mashhoor. A. Al-Wardat**, Precise masses, ages and orbital parameters of the binary systems HIP 11352, HIP 70973, and HIP72479, Astrophysical Bulletin (Springer), **2021**, Vol. 76, (71-83) **Impact Factor:** 1.191

20. Mohammad K. Mardini , Vinicius M. Placco , Yohai Meiron , Marina Ishchenko , Branislav Avramov , Matteo Mazzarini , Peter Berczik , Manuel Arca Sedda , Timothy C. Beers , Anna Frebel , Ali Taani , Martina Donnari , **Mashhoor A. Al-Wardat,** and Gang Zhao, Cosmological Insights into the Early Accretion of *r*-Process-Enhanced stars. I. A Comprehensive Chemo-dynamical Analysis of LAMOST J1109+0754, Astrophysical Journal, 2020, Vol. 903, Issue No. 2, id.88, 18pp. **A Q1 Journal, Impact Factor 2021: 5.874**

21. Ali Taani, Awni Khasawneh, Mohammad Mardini, Ahmad Abushattal, and **Mashhoor Al-Wardat**, **Probability Distribution of Magnetic Field Strengths through the Cyclotron Lines in High-Mass X-ray Binaries**, Jordan Journal of Physics (JJP), Volume 13, Number 1, **2020**.

22. A. A. Abushattal, **M. A. Al-Wardat**, A.A. Taani, A. M. Khassawneh and H. M. Al-Naimiy, **Extrasolar Planets in Binary Systems (Statistical Analysis)**, IOP Publishing Ltd, Journal of Physics: Conference Series, **2019**, Volume 1258, Number 1.

23. Ali Taani, Shigeyuki Karino, Liming Song, Mohammad Mardini, **Mashhoor Al-Wardat**, Ahmad Abushattal, Awni Khasawneh and Hamid Al-Naimiy, **On the wind accretion model of GX 301-2**, IOP Publishing Ltd, Journal of Physics: Conference Series, **2019**, Volume 1258, Number 1.

24. Mohammad K. Mardini, Nidal Ershiadat, **Mashhoor A. Al-Wardat**, Ali A. Taani, Sergen Özdemir, Hamid Al-Naimiy and Awni Khasawneh, **The Nucleosynthesis and Reaction Rates of Fluorine 19 (19 F) in the Sun**, IOP Publishing Ltd, Journal of Physics: Conference Series, **2019**, Volume 1258, Number 1.

25. Masda, Suhail G.; **Al-Wardat, Mashhoor A**.; Pathan, J. M. Orbital and physical parameters of the close binary system: GJ 9830 (HIP 116259), Research in Astronomy and Astrophysics (RAA), **2019**, Vol. 19, No. 7. Impact Factor: 1.227.

26. Taani, Ali; Karino, Shigeyuki; Song, Liming; **Al-Wardat, Mashhoor**; Khasawneh, Awni; Mardini, Mohammad K., **On the possibility of disk-fed formation in supergiant high-mass X-ray binaries**, **,** Research in Astronomy and Astrophysics (RAA), **2019**, Vol. 19, Issue 1. Impact Factor: 1.227.

27. Suhail G. Masda, **Mashhoor A. Al-Wardat,** and Pathan, J. M. , **Stellar parameters of the two binary systems: HIP 14075 and HIP 14230**, Journal of Astrophysics and Astronomy (Springer), **2018**, Vol. 39, Issue 5

28. Talafha, M. H.; **Al-Wardat, M. A.;** Ershidat, N. M., **A Study of the Abundance of Low-Z Elements in the Sun During its Whole Predicted Life**, Astrophysical Bulletin (Springer), **2018**, Vol. 73, No.2**. Impact Factor:** 1.290

29. Suhail G. Masda, **Mashhoor A. Al-Wardat,** and Pathan, J. M. ; **Physical and Geometrical Parameters of CVBS XIII: HIP 105947,** Research in Astronomy and Astrophysics (RAA), **2018**, Vol. 18, No. 6, Impact Factor (2017): 1.227.

30. **Mashhoor A. Al-Wardat,** Jose Docobo, Ahmad A. Abu-Shattal and P.P. Campo, **Physical and geometrical parameters of CVBS. XII. FIN 350 (HIP 64838),** Astrophysical Bulletin, **2017**, Vol. 72, No. 1, pp 24–34**. Impact Factor:** 1.290

31. **Mashhoor A. Al-Wardat**, El-Mahameed, M. H. Yusuf, Nihad A., Khasawneh, Awni M, and Suhail G. Masda; **Physical and Geometrical Parameters of CVBS XI: COU1511 (HIP12552),** Research in Astronomy and Astrophysics (RAA), **2016**, Vol. 16, No. 11. Impact Factor (2016): 1.371.

32. Suhail G. Masda, **Mashhoor A. Al-Wardat**, Ralph Neuhäuser, and Hamid M. Al-Naimiy; **Physical and Geometrical Parameters of CVBS X: The Spectroscopic Binary Gliese 762.1**, Research in Astronomy and Astrophysics (RAA), **2016, Vol. 16**, issu 7, article id 12**. Impact Factor** (2015)**:** 1.29 Doi: 10.1088/1674-4527/16/7/112

33. Al-Wardat, M; **Physical and Geometrical Parameters of the Evolved Binary System HD6009**, Astrophysical Bulletin**, 2014,** Vol. 69, No. 4, pp. 454-460**. Impact Factor** (2013)**:** 1.000

34. Al-Wardat, M. A.; Al-Naimiy, H.; Taani, A.; Khasawneh, A.; Al-Banawi, O.; Widyan, H. S., **Modified Physical and Geometrical Elements of the Eclipsing X-Ray Binary System Centaurus X-3,** Astrophysical Bulletin**, 2014**, Vol. 69, No. 3, pp. 325–329**. Impact Factor** (2013)**:** 1.000

35. Al-Wardat, M. A.; Balega, Yu. Yu.; Leushin, V. V.; Zuchkov, R. Ya.; Abujbha, R. M.; Al-Waqfi, K. S.; Masda, S., **Physical and geometrical parameters of the binary system gliese 150.2**, Astrophysical Bulletin**, 2014**, Vol. 69, No. 2, pp. 198–204**. Impact Factor** (2013)**:** 1.000

36. Mashhoor A. Al-Wardat, Hatem S. Widyan and Ahmed Al-thyabat; **Complex Analysis of the Stellar Binary HD25811: A Subgiant System,** Publications of the Astronomical Society of Australia (PASA), Vol. 31, e005, 6 pages (**2014**). doi:10.1017/pasa.2013.42. **Impact Factor:** 4.095

37. Al-Wardat, M; Balega, Yu. Yu.; Leushion, V. V.; Taani, A. A.; Yusuf, N. A.; Al-Waqfi, K. S.; Masda, S., **Speckle-Interferometric Binary System HD 375; Is It a Subgiant Binary?**, Astrophysical Bulletin, **2014**, Vol. 69, No. 1, pp. 58–66. **Impact Factor** (2013)**:** 1.000

38. Ali Taani, Mashhoor A. Al-Wardat and Awni Khasawneh, **Evolution of Accreting Binary Systems on the Spin-up Line**, Australian Journal of Basic and Applied Sciences, 7(13) November **2013**, Pages: 287-291.

39. Sherin A. Saraireh, Abdul-Wali Ajlouni, Mashhoor Al-Wardat and Hatim Al-Amairyeen, **Radiation absorbed dose rates in the dead sea region**, Jordan, Canadian Journal of Pure and Applied Sciences, Vol. 6, No.2, pp. 2017-2022, **2012**. **Impact Factor** (2013)**:** 2.657

40. Widyan H and Al-Wardat M., **Time dependent action in Phi^6 potential**, Communication in Theoretical Physics, 58, No.1, 19-26, **2012**. doi:10.1088/0253-6102/58/1/04 **Impact Factor:** (2013)**:** 1.049

41. Al-Wardat M. **Physical Parameters of the Visually Close Binary Systems Hip70973 and Hip72479**, Publications of the Astronomical Society of Australia, **29**, 523–528, **2012**. http://dx.doi.org/10.1071/AS12004. **Impact Factor:** 4.095

42. Widyan H and Al-Wardat M., **Time dependent action in Phi^6 potential**, Communication in Theoretical Physics, 58, No.1, 19-26, **2012**. **Impact Factor** (2013)**:** 1.049

43. Taani A., Zhang C., Al-Wardat M., Zhao V., **Where do the progenitors of millisecond pulsars come from?,** Astronomische Nachrichten, AN 333, No. 1, 53-59, 2012. **Impact Factor** (2013)**:** 1.119

44. Taani A., Zhang C., Al-Wardat M., Zhao V., **Investigation of Some Physical Properties of Accretion Induced Collapse in Producing Millisecond Pulsars**, Astrophysics & Space science A&SS, 340, No.1, 147-153, 2012 _DOI: 10.1007/s10509-012-1023-8, **2012**. **Impact Factor** (2013)**:** 2.401

45. Al-Wardat M., Taani A., and Asplund M., **Atmospheric modeling of the VCBS Hip4809: a modification to its Hipparcos parallax measurement**. Proceedings: 3rd Galileo-Xu Guangqi Meeting, October 11-15, **2011**.

46. Taani A., Al-Wardat M., and Zhao Y., **On the Possibility of Forming Accretion Induced Collapse in Massive Cataclysmic Variables**. Proceedings: 3rd Galileo-Xu Guangqi Meeting, October 11-15, **2011**.

47. Widyan H and Al-Wardat M., **Classical Solution for the Bounce up to Second Order**, Chinese Journal of Physics, 48, No. 6, 736-747, 2010. http://psroc.phys.ntu.edu.tw/cjp/v48/736.pdf. **Impact Factor (2013): 0.431**

48. Al-Wardat M. and Widyan H., **Parameters of the visually close binary system Hip11253 (HD14874)**, Astrophysical Bulletin, 64, No. 4, 365-371, 2009. **Impact Factor** (2013)**:** 1.000

49. Al-Wardat M. A., Parameters of the components of visually close binary systems: Hip11352, Astronomische Nachrichten, AN **330**, No. 4, 385 – 389, 2009. **Impact Factor** (2013)**:** 1.119

50. Al-Wardat M. and Widyan H., Atmospheric Modeling of the Stellar Binary System 9Cyg, proceedings of the **International Conference On Modeling And Simulation (Ms'08)** 11-13 Nov. 2008, Petra, Jordan. (ISBN 978-9957-8643-0-9) Al-Hussein Bin Talal University, Jordan

51. Al-Wardat M. A., **Synthetic photometry of speckle interferometric binaries**, Astrophysical Bulletin, **63**, No. 4, 361- 365, 2008.

52. Al-Wardat M. A., **Model atmosphere parameters of the binary systems COU1289 and COU1291**, Astronomische Nachrichten, AN **328**, No. 1, 63 – 67, 2007

53. Al-Wardat M. A**., A method for estimating model atmosphere parameters of the components of binary systems**, proceedings of the 8th Arab Conference of Astronomy and Space Sciences**.** (Djerba, Tunis, 19-23 March 2007)

54. Al-Wardat M. A., Balega Yu. Yu., Pluzhnik E. A., Shkhagosheva Z.U. **Speckle interferometric results and modified orbits of five binary systems**, Spec. Astrophys. Observatory, Preprint No. 190 (2003)

55. Al-Wardat M.A., **Model atmosphere parameters of the binary systems 41Dra**, Spec. Astrophys. Observatory, Preprint No. 186 (2003)

56. Al-Wardat M. A., Balega Yu. Yu., Leushin V. V., Musaev F. A., **Spectroscopic and speckle-interferometric observations of the multiple system ADS11061**, Kinematika I Physika Nebesnyh Tel, **4**, 2003.

57. Al-Wardat M.A., **Spectrophotometry of speckle binary stars III**, Bull. Spec. Astrophys. Observatory, **55**, 18-37, 2003.

58. Al-Wardat M.A., **Spectrophotometry of speckle binary stars II**, Bull. Spec. Astrophys. Observatory, **54**, 29-45, 2002.

59. Al-Wardat M.A., **Spectrophotometry of speckle binary stars**, Bull. Spec. Astrophys. Observatory, **53**, 58-77, 2002.

60. Al-Wardat M.A., Spectral energy distributions and model atmosphere parameters of the quadruple system ADS11061, Bull. Spec. Astrophys. Observatory, **53**, 51-57,2002.

61. Al-Wardat M. A., Balega Yu. Yu., Leushin V. V., Monin D., Pluznik E. A., **The Complex Study of the Quadruple System ADS11061**, Proceedings of the IAU Symposium No. **210** Modelling of Stellar Atmospheres (Uppsala, Sweden; 17-21 June 2002).

62. Al-Wardat M. A., Balega I. I., Balega Yu. Yu., Lueshin V. V., Pluzhnik E. A., Shkhagosheva Z.U., The system 41 Draconis: approaching priastron on 2001, Proceedings of All-Russian Astronomical Conference (Saint Petersburg; 6 - 12 August 2001).

63. Al-Wardat M. A., Al-Naimiy H. M., Barghouthi I. A., Sabat H., **New physical and geometrical elements of some x-ray binary stars**, Astrophysics and Space Science, **260**; 335-345, 1999.

64. Sabat H., Al-Naimiy H. M., Barghouthi I. A., Al-Wardat M. A., **Synthetic light curve of some X-ray binary stars**, Astrophysics and Space Science, **260**; 347-357, 1999.