

## 1. CURRICULUM VITAE

Name: MUSTAFA Famil

Birthplace: Guba, Azerbaijan

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Education (University / High School, Faculty /Department, Course, Year of Graduation):

- Baku State University, Faculty of Physics, Bachelor Degree, July 2003:
- Baku State University, Faculty of Physics, Department of Astrophysics, First-Class Honors Magistrate Degree (Master Science Degree), July 2005:
- Shamakhy Astrophysical Observatory named after N.Tusi (ShAO), Azerbaijan National Academy of Sciences (ANAS) – PhD candidate 2008

Previous Experience (Organization, Position, Title, Dates):

- ShAO, ANAS Laboratory assistant, June 2003 – July 2005,
- ShAO, ANAS, Junior Scientific Researcher, July 2005 – December 2008,
- ShAO, ANAS, Scientific Researcher, December 2008 – Present
- Tusi-Bohm Planetarium, Director, October 2012 – Present
- Ministry of Education, Republican Center for Environmental Education and Practice, Chief Specialist -2018.
- Khazar University, teacher - 2021.

## 2. RELEVANT RESEARCH EXPERIENCE

Major Fields of Scientific Research (Keywords):

- Solar and Geomagnetic Activity, Solar-Terrestrial Influences, Space Weather Impacts, Helio-Biology-Medicine
- Asteroids and Other Space Hazards
- Dark and Quiet Skies for Science and Society
- Astronomy and Astrotourism
- Astronomy Outreach

Membership in Scientific and/or Professional Institutions, Bodies, and Organizations:

- Member of the American Geophysical Union (AGU) (2007),
- Member of the European Astronomical Society (EAS) (2010)
- Member of the Astronomers Without Borders (AWB) (2011)
- Member of the European Geosciences Union (EGU) (2015)
- National Coordinator for World Space Week (WSW) (2015-2021)
- National Coordinator for Asteroid Day (AD) (2016)
- IAU National Outreach Coordinator (NOC) (2018-2021)
- National Coordinators for Scientist for a Day (2018-2021)
- IAU National Astronomy Education Coordinator (NAEC) (2020)
- Member of the American Astronomical Society (AAS) (2020)
- Member of the European Association for Astronomy Education (EAAE) (2022)

- Team Leader for International Olympiad on Astronomy and Astrophysics (IOAA) (2020)

Professional and Scientific Awards:

- INTAS – Young Scientist Fellowship Collaborative Call with Azerbaijan 2006, Ref. Nr 06-1000015-6408
- Science Development Foundation under the President of the Republic of Azerbaijan, Basic Grant Competition on complex scientific-research programs for 2015 EIF-KETPL-2015-1(25)
- Science Development Foundation under the President of the Republic of Azerbaijan, 1<sup>st</sup> Azerbaijani-Russian Joint Grant Competition (EIF-BGM-4-RFTF-1/2017)
- The ‘Astronomy for All’ Prize - 1st place for outstanding participation and contributions in the 100 Hours of Astronomy global event. 2019
- 2020 Open Astronomy Schools Teacher Training Call Winner.

International Experience (Country, Institution, Duration, Year):

- Bulgaria, Solar-Terrestrial Influences Laboratory at the Bulgarian Academy of Sciences, 2 months (May 2007- June 2007), 2007
- Turkey, Kandilli Observatory and Earthquake Research Institute, Bogazici University, 2 months (June 2008- July 2008), 2008
- Belgium, Katholik University of Leuven, Centre for mathematical Plasma Astrophysics, 3 month (April 2012 – June 2012 )
- Belgium, Katholik University of Leuven, Centre for mathematical Plasma Astrophysics, 1 month (June 2015 – July 2015 )
- Belgium, Katholik University of Leuven, Centre for mathematical Plasma Astrophysics, 1 month (July 2016 – August 2016 )

**Google Scholar Index** – 245. H-Index 7.

<https://scholar.google.com/citations?user=E3-l-c0AAAAJ&hl=en>

**Researchgate** – 80, H-Index 5.

([https://www.researchgate.net/profile/Famil\\_Mustafa](https://www.researchgate.net/profile/Famil_Mustafa))

**Web of Science** – 42, H-Index 2.

<https://publons.com/researcher/4950458/famil-r-mustafa/>

Participation and/or presentation in the conference, symposium and workshops:

- “Solar System Researches: perspectives of collaboration with ShAO”, ShAO, Shamakhy, Azerbaijan 14-17 June, 2004
- Memorial international conference “Astronomy and Space Physics at Kyiv university”, Kiev, Ukraine May 22-26, 2005
- International Symposium "Astronomy - 2005: Current State and Prospects", Moscow, Russia 1-6 June, 2005
- International Heliophysical Year (IHY) Regional planning meeting for the Balkan and Black Sea region, Sozopol, Bulgaria, 6-8 June 2005
- Annual Meeting of the Balkans, Black Sea and Caspian Sea Regional Network on Space Weather Studies, Manavgat - Antalya, TURKEY, March 30 - April 1, 2006

- WORKSHOP INTAS South- Caucasus 2007 Collaborative Call INTAS -South Caucasus 2006 & Projects for the EU - South Caucasus Scientific Cooperation, Tbilisi, Georgia, 28-30 March 2007
- Young Scientists' International School: "Heliosphere and Galaxy", Sinaia, Romania, 03-05 May 2007
- Management Committee Meeting and Scientific Event COST Action 724 "Developing the basis for monitoring, modeling and predicting Space Weather" Sofia (Bulgaria), 21-25 May 2007
- SENS 2007, Third Scientific Conference With International Participation, SPACE, ECOLOGY, NANOTECHNOLOGY, SAFETY, Varna, Bulgaria, 27- 29 June 2007
- SCOSTEP's International CAWSES Symposium, 23 – 27 October 2007, Kyoto, Japan
- International Heliophysical Year -2007 International Symposium "New Insights in Solar-Terrestrial Physics (NISTP), 5-11 November 2007, Zvenigorod, Moscow Region, Russia
- UN / NASA / ESA / JAXA Workshop on the International Heliophysical Year 2007 and Basic Space Science "First Results of IHY 2007" hosted by the Solar-Terrestrial Influences Laboratory at the Bulgarian Academy of Sciences on behalf of the Government of Bulgaria, 02-06 June 2008, Sozopol, Bulgaria
- International Tusi Conference on Astrophysics Devoted to the Maragha Observatory's 750 years Anniversary & 50 years jubilee of ShAO, 23-25 May 2009, Maragha, Tabriz, I.R.Iran
- The First IHY International Workshop on Advancing Very Low Frequency (VLF) Science Through the Global AWESOME Network, 30 May – 1 June 2009, Tunis, Tunisia
- Solar Influences on the Magnetosphere, Ionosphere and Atmosphere, First SEE/VarSITI kickoff meeting, Meeting of the BBC Regional Network for Space Weather Studies, Sunny Beach, Bulgaria, 26-30 May 2014
- 22nd International Planetarium Society Conference, Beijing, China, 23-27 June, 2014
- The 5th IAGA/ICMA/SCOSTEP Workshop on Vertical Coupling in the Atmosphere-Ionosphere System, Akdeniz University, Antalya, 11 – 15 August 2014
- Solar Influences on the Magnetosphere, Ionosphere and Atmosphere, Sunny Beach, Bulgaria, 1-5 June 2015
- IPS Conference, Warsaw, Poland, 19-23 June, 2016
- 13th European Space Weather Week, Oostende, Belgium, 14-18 November 2016
- "ITCA Colloquium – Astronomy for STEM Education, 7 – 11 August 2017, Bangkok, Thailand
- 24th International Planetarium Society Conference, Toulouse, France, 01-05 July, 2018
- Solar Orbiter SocialSpace event, ESA, ESOC , Darmstadt, Germany, 5-6 February 2020
- Astronomy Education Adventure in the Canary Islands, 20-24.08.2020
- Global Hands-On Universe 2020 Conference, 22-28.08.2020
- Global e-Competition on Astronomy and Astrophysics, 25.09 – 25.10.2020
- Second Shaw-IAU Workshop on Astronomy for Education, 6 – 9 October 2020
- Dark and Quiet Skies for Science and Society, 5 – 9 October 2020
- European Space Weather Symposium (ESWS), 2-6.11. 2020
- Using Space in Education, 09.11.2020
- IAU Astrotourism Workshop, 28 June 2021

- Astronomy and Astrotourism (AAA) Course, August-September, 2021
- 14th International Olympiad on Astronomy and Astrophysics (IOAA 2021), Bogotá, Colombia, November 14- 21, 2021
- 7th International Conference MTP-2021: Modern Trends in Physics, Baku, Azerbaijan, December 15-17, 2021
- 15th International Olympiad on Astronomy and Astrophysics (IOAA 2022), Kutaisi, Georgia, August 14-22, 2022
- United Nations/Azerbaijan Workshop on the International Space Weather Initiative: The Sun, Space Weather and Geosphere, 31 OCTOBER – 4, NOVEMBER 2022, BAKU, AZERBAIJAN
- 16th International Olympiad on Astronomy and Astrophysics (IOAA 2023), Chorzów, Poland, August 10-20, 2023
- 30th Workshop on Space Technology for Socio-Economic Benefits: "Challenges and Capacity-building Opportunities for Emerging Space Nations", Baku, Azerbaijan, 29 September - 1 October 2023.

#### Principal Publications:

1. F.R. MUSTAFA, EXPLORING THE COSMOS AND INSPIRING MINDS: TUSIBOHM PLANETARIUM AND ITS IMPACT ON ASTRONOMY OUTREACH, *Sky*, 2023, Special issue November 2023
2. Z. VIDADI, F. MUSTAFA, AZERBAIJANI NAMES IN DEPTHS OF SPACE, *Sky*, 2023, Special issue November 2023
3. A.S.GULIYEV, U.J. POLADOVA, F.R. MUSTAFA, THE POSSIBLE CONNECTION OF COMET OUTBURSTS AND THEIR ANOMALY TAILS WITH THE SOLAR ACTIVITY, *Transactions of ANAS, Physics And Astronomy*, 2023, N-5, pp. 82-88, [http://physics.gov.az/Transactions/2023/journal2023\(5\).pdf](http://physics.gov.az/Transactions/2023/journal2023(5).pdf)
4. E. Bayramova, F. Mustafa, R. Ismayilli, EFFECTS OF GEOMAGNETIC STORMS ON THE MID-LATITUDE D-REGION OF THE IONOSPHERE, *Proceedings of the 7th International Conference MTP-2021: Modern Trends in Physics*, [http://mtp2021.bsu.edu.az/Proc-MTP-2021\\_Volume\\_2.pdf](http://mtp2021.bsu.edu.az/Proc-MTP-2021_Volume_2.pdf)
5. L.F.Golubeva, F.R.Mustafa, D.I.Shestopalov, “Asteroid hazard and instrumental capabilities of the Shamakhy Astrophysical Observatory”, *AJAz.*, 2021, 16(1), pp. 36-42, ([https://aaj.shao.az/vol16\\_n1/AAJ\\_2021\\_V16\\_N1.pdf](https://aaj.shao.az/vol16_n1/AAJ_2021_V16_N1.pdf))
6. Svetla Dimitrova, Elchin Babayev, Rosanna Chizhova , Famil Mustafa, GEOMAGNETIC VARIATIONS AND DYNAMICS OF SUDDEN CARDIAC DEATHS, **SES 2020- Sixteen International Scientific Conference SPACE, ECOLOGY, SAFETY**, 2020, pp. 283-287. ([http://space.bas.bg/SES/archive/SES%202020\\_DOKLADI/PROCEEDINGS%20SES%202020.pdf](http://space.bas.bg/SES/archive/SES%202020_DOKLADI/PROCEEDINGS%20SES%202020.pdf))
7. S.Dimitrova, F.Mustafa, E.Babayev, “Geomagnetic Activity Variations Of Solar Origin And Dynamics Of Sudden Cardiac Deaths”, **SES 2019, 5<sup>th</sup> International Scientific Conference Space , Ecology, Safety**, Bulgaria, 2019.([http://www.space.bas.bg/SES/archive/SES%202019\\_DOKLADI/4\\_Ecology/19\\_Dimitrova.pdf](http://www.space.bas.bg/SES/archive/SES%202019_DOKLADI/4_Ecology/19_Dimitrova.pdf))

8. S. Dimitrova, E. Babayev, F. Mustafa, "Potential Effects of the Heliogeophysical Activity on Dynamics of the Sudden Cardiac Death at Middle Latitudes on the Earth", **Special Issue of SUN and GEOSPHERE**, 2017 ([http://newserver.stil.bas.bg/SUNGEO//00SGArhiv/SG\\_v12\\_No1\\_2017-pp-41-48.pdf](http://newserver.stil.bas.bg/SUNGEO//00SGArhiv/SG_v12_No1_2017-pp-41-48.pdf)).
9. S.G.Mamedov, D. M. Kuli-Zade, Z. F. Alieva, M.M. Musaev, F. R. Mustafa, "Total number of spicules on the Solar surface and their role in heating and mass balance of the Corona", **Astronomy Reports**, 2016 (<https://link.springer.com/content/pdf/10.1134/S1063772916080060.pdf>), Vol. 93, No. 8, pp. 1–6.
10. F.R.Mustafa, A.Kilcik, E.S.Babayev, A.Ozguç, "Cosmic Ray Intensity and Solar Activity Variations Possible Effects on the Rainfall in Turkey and Azerbaijan and Caspian Sea Level Changes", **Space Research and Technologies Institute Bulgarian Academy of Sciences, ISSN 2367-7570**, 2015 (<http://ws-sozopol.stil.bas.bg/2015Sunny/Proceedings2015S3-4.pdf>), pp. 63-68.
11. S. G. Mamedov, N. S. Dzhililov, D. M. Kulizade, F. R. Mustafa, "*The Location of Moreton Waves in the Solar Atmosphere*", ISSN 1063-7729, **Astronomy Reports**, 2015, Vol. 59, No. 2, pp. 165–174. (<https://link.springer.com/article/10.1134/S1063772915010072>)
12. N.N. Teymurov, R.R. Bogdanov, A.V. Zamanov, F.R. Mammadov, F.R. Mustafa, Kh. M. Mikailov, "*Observation Asteroid 2012 DA14 in the Shamakhy Astrophysical Observatory*", **Azerbaijani Astronomical Journal**, 2012, Vol. 7, No. 3. pp. 32-33, (<http://adsabs.harvard.edu/abs/2012AzAJ....7c..32T>)
13. A.A. Pevtsov, S.H. Mamedov, H.S. Dzhililov, J. M. Gulu-zadeh, F.R. Mustafa, "*Investigation of Some Problems of Moreton Wave*", **Azerbaijani Astronomical Journal**, 2011, Vol. 6, No. 4. pp. 22-33, ([http://aaj.shao.az/vol6\\_n4/AAJ\\_2011\\_V6\\_N4.pdf](http://aaj.shao.az/vol6_n4/AAJ_2011_V6_N4.pdf))
14. S. Dimitrova, F.R. Mustafa, I. Stoilova, E.S. Babayev, E. Kazimov, "Possible Influence of Solar Extreme Events and Related Geomagnetic Disturbances on Human Physiological State: Results of Collaborative Bulgarian-Azerbaijani Studies", **Advances in Space Research**, 2009, Vol. 43, No. 4, pp. 641-648, doi:10.1016/j.asr.2008.09.006, (<http://adsabs.harvard.edu/abs/2009AdSpR..43..641D>)
15. S.Dimitrova, E.S.Babayev, F.R.Mustafa, I.Stoilova, T.Taseva, K.Georgieva, "*Geomagnetic Storms and Acute Myocardial Infarctions Morbidity in Middle Latitudes*", **SUN and GEOSPHERE**, Vol.4, No.2, 2009, pp. 72-78, ([http://newserver.stil.bas.bg/SUNGEO/00SGArhiv/SG\\_v4\\_No2\\_2009-p-72-78.pdf](http://newserver.stil.bas.bg/SUNGEO/00SGArhiv/SG_v4_No2_2009-p-72-78.pdf))
16. S.Dimitrova, E.S.Babayev, K.Georgieva, V.N.Obridko, F.R.Mustafa, "*Possible Effects of Solar and Geomagnetic Activity on Sudden Cardiac Death in Middle Latitudes*", **SUN and GEOSPHERE**, Vol. 4, No. 2, 2009, pp. 84-88, ([http://newserver.stil.bas.bg/SUNGEO/00SGArhiv/SG\\_v4\\_No2\\_2009-p-84-88.pdf](http://newserver.stil.bas.bg/SUNGEO/00SGArhiv/SG_v4_No2_2009-p-84-88.pdf))

17. E.S. Babayev, V.N. Obridko, V.V. Asadov, F.R. Mustafa, P.N. Shustarev, A.R. Allahverdiyev, "*Possible Influence of Space Weather Changes on Dynamics of Traffic Accidents in Middle Latitudes*", **Russian journal of Solar-Terrestrial Physics**, Vol. 2, No. 12, 2008, pp. 341-344, (<http://ru.iszf.irk.ru/images/7/76/340-343.pdf>).
18. S. Dimitrova, F.R. Mustafa, I. Stoilova, E.S. Babayev, V.N. Obridko, K. Georgieva, T. Taseva, S.S. Aliyeva, "*Heliogeophysical Activity and Mortality from Acute Myocardial Infarctions: Results of Collaborative Bulgarian-Azerbaijani Studies*", **Russian journal of Solar-Terrestrial Physics**, Vol. 2, No. 12, 2008, pp. 344-349, (<http://ru.iszf.irk.ru/images/9/97/344-349.pdf>).
19. E. Stoupel, E.S. Babayev, F.R. Mustafa, E. Abramson, P. Israelevich, J. Sulkes, "*Two Groups of Acute Cardiac Events and Environmental Physical Activity*", **Russian journal of Solar-Terrestrial Physics**, Vol. 2, No.12, 2008, pp. 354-359, (<http://ru.iszf.irk.ru/images/0/03/354-359.pdf>).
20. E.S.Babayev, V.G.Kuznetsov, A.M.Hashimov, N.A.Yusifbeyli, A.B.Asgarov, P.N.Shustarev, F.R.Mustafa. "*Technological, socio-economic and ecological aspects of space weather impacts on the normal operation of oil and gas pipeline systems and reliability of electric power supply grids in Azerbaijan and South Energy Corridor region*" **Euro-Asian Journal of Sustainable Energy Development Policy**, PROMITHEAS-2 The EU-BSEC Energy and Climate Policy Network, Greece, 2008, (<http://www.promitheasnet.kepa.uoa.gr/images/files/EURO-ASIAN%20JOURNAL%20No2%20PAGES%2015-26.pdf>).
21. E.S.Babayev, A.M.Hashimov, A.S.Guliyev, F.R.Mustafa, P.N.Shustarev, A.B.Asgarov, "*Space weather effects studies in Azerbaijan: potential impacts on geosphere, biosphere and periodic comets.*" Proceedings of the **Third Scientific Conference with International Participation Devoted to the 50-th anniversary of the first artificial satellite of the Earth "Space – Ecology - Nanotechnology – Safety" (SENS-2007)**, ISSN 1313 – 3888, Space Research Institute – Bulgarian Academy of Sciences, Sofia, Bulgaria, 2008, pp. 363-368, (<http://www.space.bas.bg/SENS-2007/6-5.pdf>).
22. H. Mavromichalaki, M. Papailiou, S. Dimitrova, E. S. Babayev, F. R. Mustafa, "*Geomagnetic Disturbances and Cosmic Ray Activity in Relation to Human Physiological Parameters: A Wide Collaboration*", **21st European Cosmic Ray Symposium in Košice**, Slovakia, 2008, 6 pages (<http://ecrs2008.saske.sk/dvd/s4.08.pdf>)
23. E. Stoupel, E. Babayev, F. Mustafa, E. Abramson, P. Israelevich, J. Sulkes, "*Acute Myocardial Infarction Occurrence: Environmental Links – Baku 2003–2005 Data*", **Med Sci. Monitor**, 2007 Vol. 13, No. 8, pp. BR175-179, (<http://www.medscimonit.com/download/index/idArt/491602>).
24. E.S.Babayev, F.R.Mustafa, P.N.Shustarev, "*Space Weather and Beekeeping*", *Russian Beekeeping Journal*, 2007, No. 1, pp. 12-15.
25. E.S.Babayev, A.A.Allahverdiyeva, F.R.Mustafa, P.N.Shustarev, "*An Influence of Changes of Heliogeophysical Conditions on Biological Systems: Some Results of Studies Conducted in the Azerbaijan National Academy of Sciences*", **Sun and**

**Geosphere**, The International Journal of Research and Applications (ISSN 1819-0839), 2007, Vol.2, No1, pp. 48-52, (<http://www.sungeosphere.org/>)

26. F.R. Mustafa, A.S. Guliyev, E.S. Babayev, P.N. Shustarev, "Solar Activity Influence on Brightness Changes of the Periodic Comets 29P/Schwassmann-Wachmann and 1P/Halley", Romanian Astronomical Journal, Vol. 17, **Supplement Proceedings of the Young Scientists' International School**, HELIOSPHERE AND GALAXY, Romania, 2007, pp. 111-118, (<http://adsabs.harvard.edu/abs/2007RoAJ...17S.111M>)
27. A.S. Guliyev, F.R. Mustafa, E.S. Babayev, P.N. Shustarev, "Solar Activity and Brightness Curves of Comets 29P/Schwassmann- Wachmann and 1P/Halley", Natural Cataclysms and Global Problems of the Modern Civilization, Special edition of **Transactions of the International Academy of Science Health & Ecology**, Baku-Innsbruck, 2007, pp. 339-348, (<http://www.book-ias-he.org/Symposium.pdf>).
28. E.S.Babayev, F.R.Mustafa, P.N.Shustarev, A.B.Asgarov, "An influence of solar and geomagnetic activity on honey bees and world honey production", **News of Baku University, Series Physical-Mathematical Sciences (ISSN 1609-0586)**, 2006, Vol. 1, pp. 218-228, ([http://static.bsu.az/w8/Xeberler%20Jurnali/riyaz%20%202006%20%201/218-228\\_curves.pdf](http://static.bsu.az/w8/Xeberler%20Jurnali/riyaz%20%202006%20%201/218-228_curves.pdf)).
29. E. Stoupel, E.S.Babayev, F.R.Mustafa, E.Abramson, P.Israelevich, J. Sulkes, "*Clinical Cosmobiology - Sudden Cardiac Death and Daily / Monthly Geomagnetic, Cosmic Ray and Solar Activity - the Baku Study (2003-2005)*", **Sun and Geosphere**, The International Journal of Research and Applications (ISSN 1819-0839), 2006, Vol.1, No.2, pp. 13-16, ([http://newserver.stil.bas.bg/SUNGEO/00SGArhiv/SG\\_v1\\_No2\\_2006-pp-13-16.pdf](http://newserver.stil.bas.bg/SUNGEO/00SGArhiv/SG_v1_No2_2006-pp-13-16.pdf)).
30. E.S.Babayev, A.M.Khalilov, F.R.Mustafa, Y.A.Guliyev, A.B.Asgarov, "*On possible influence of changes of heliogeophysical conditions on beekeeping*". In: **Proceedings of the International Conference: Solar System Researches: perspectives of collaboration with ShAO**, ShAO, Shamakhy, Azerbaijan, 14-17 June, 2004 (ISBN: 9952 8003 2-0), pp. 44-49.