

## **Assoc. Prof. MURAT KAPLAN**

### **Personal Information**

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### **International Researcher IDs**

ScholarID: X-5yC8sAAAAJ

ORCID: 0000-0003-2595-5463

Publons / Web Of Science ResearcherID: D-5149-2013

ScopusID: 14822214300

Yoksis Researcher ID: 148701

### **Education Information**

Doctorate, Istanbul Technical University, Bilişim Enstitüsü, Bilişim, Turkey 2001 - 2009

Postgraduate, Istanbul Technical University, Nükleer Enerji Enstitüsü, Nükleer Bilimler, Turkey 1998 - 2001

Undergraduate, Istanbul University, Faculty Of Science, Astronomi Ve Uzay Bilimleri, Turkey 1991 - 1996

### **Foreign Languages**

English, B2 Upper Intermediate

### **Research Areas**

Physics, Astronomy and Astrophysics, Astronomy and Astrophysics: Instrumentation Techniques and Observations, Natural Sciences

### **Academic Titles / Tasks**

Associate Professor, Akdeniz University, Faculty of Science, Department of Space Sciences and Technologies, 2022 - Continues

Assistant Professor, Akdeniz University, Faculty of Science, Department of Space Sciences and Technologies, 2011 - Continues

Researcher, University of Wales, Cardiff, The School Of Physics And Astronomy , Star Formation, 2009 - 2010

Research Assistant, Istanbul Technical University, Bilişim Enstitüsü, Bilişim, 2001 - 2010

### **Courses**

Yörünge Mekanığı, Undergraduate, 2021 - 2022, 2019 - 2020, 2018 - 2019, 2017 - 2018, 2016 - 2017

Güneş Sisteminde Konum Ölçümü, Postgraduate, 2021 - 2022, 2020 - 2021

Yörünge Mekanığında Hesaplamalı Teknikler, Postgraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

Bilgisayar Programlama I, Undergraduate, 2021 - 2022, 2020 - 2021, 2019 - 2020, 2018 - 2019

Uzay Bilimlerinde Hesaplamalı Teknikler, Postgraduate, 2015 - 2016, 2012 - 2013  
İstatistiksel Yörünge Tayini, Doctorate, 2015 - 2016

## Advising Theses

- Kaplan M., Güneş Sistemi Nesnelerinin Yıldız Örtülme Tekniği İle İncelenmesi, Doctorate, Y.KILIÇ(Student), 2023  
KAPLAN M., Yer İle Eş-Yörüngelerdeki Asteroidlerin Yörünge Dinamiklerinin İncelenmesi, Postgraduate,  
S.Cengiz(Student), 2019  
KAPLAN M., Aynı Bölgeye Ait Ardışık Gökyüzü Görüntülerindeki Hareketli Cisimlerin Doğru Tanıma Yöntemi İle Otomatik  
Tespit, Postgraduate, N.Karapınar(Student), 2017  
KAPLAN M., Apollo Asteroidlerine Kaynaklık Eden Bölgelerin Araştırılması, Postgraduate, O.Erece(Student), 2016

## Jury Memberships

- Doctorate, Doctorate, Akdeniz Üniversitesi, December, 2022  
Post Graduate, Volkan Sarp'in Tez Savunması Jüri Üyeliği,, Akdeniz Üniversitesi, Fen Bilimleri Enstitüsü, July, 2018  
Post Graduate, Saliha Eren'in Tez Savunması Jüri Üyeliği, Akdeniz Üniversitesi, Fen Bilimleri Enstitüsü, January, 2017  
Post Graduate, GÜLİZAR AYSAN'IN TEZ SAVUNMASI JÜRI ÜYELİĞİ,, Akdeniz Üniversitesi, Fen Bilimleri Enstitüsü, July, 2015

## Published journal articles indexed by SCI, SSCI, and AHCI

- I. **Physical properties of the slow-rotating near-Earth asteroid (2059) Baboquivari from one apparition**  
Erece O., Khamitov I., Kaplan M., Kilic Y., Lee H., Kim M., Bikmaev I. F., Gumerov R. I., Irtuganov E. N.  
PLANETARY AND SPACE SCIENCE, vol.232, pp.1-9, 2023 (SCI-Expanded)
- II. **Occultation Portal: a web-based platform for data collection and analysis of stellar occultations**  
Kilic Y., Braga-Ribas F., Kaplan M., Erece O., Souami D., Dindar M., Desmars J., Sicardy B., Morgado B. E., Shameoni M. N., et al.  
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.514, no.3, pp.1-12, 2022 (SCI-Expanded)
- III. **Apophis Planetary Defense Campaign**  
Reddy, V., Kelley M. S., Kaplan M., Dotson J., Farnocchia D., Erasmus N., Polishook D.  
PLANETARY SCIENCE JOURNAL, vol.3, 2022 (SCI-Expanded)
- IV. **Refinement of the convex shape model and tumbling spin state of (99942) Apophis using the 2020-2021 apparition data**  
Lee H. -, Kim M. -, Marciniak A., Kim D. -, Moon H. -, Choi Y. -, Zoła S., Chatelain J., Lister T. A., Gomez E., et al.  
ASTRONOMY AND ASTROPHYSICS, vol.661, pp.1-14, 2022 (SCI-Expanded)
- V. **Horseshoe co-orbitals of Earth: current population and new candidates**  
Kaplan M., Cengiz S.  
MONTHLY NOTICES OF THE ROYAL ASTRONOMICAL SOCIETY, vol.496, no.4, pp.4420-4432, 2020 (SCI-Expanded)
- VI. **Shape model and spin state of non-principal axis rotator (5247) Krylov**  
Lee H. -, Durech J., Kim M. -, Moon H. -, Kim C. -, Choi Y. -, Galad A., Pray D., Marciniak A., Kaplan M., et al.  
ASTRONOMY & ASTROPHYSICS, vol.635, 2020 (SCI-Expanded)
- VII. **Shape and spin determination of Barbarian asteroids**  
DEVOGELE M., TANGA P., BENDJOYA P., RIVET J. P., SURDEJ J., HANUS J., ABE L., ANTONINI P., ARTOLA R. A., AUDEJEAN M., et al.  
ASTRONOMY & ASTROPHYSICS, vol.607, 2017 (SCI-Expanded)
- VIII. **Dynamical analyses on the transitivity from JFC and Centaur regions to NEAs with Tisserand parameters from 2 to 3**

- KAPLAN M., ERECE O., ASLAN G., EKER Z.  
 ADVANCES IN SPACE RESEARCH, vol.58, no.11, pp.2407-2415, 2016 (SCI-Expanded)
- IX. **A-Track: A new approach for detection of moving objects in FITS images**  
 Atay T., KAPLAN M., Kilic Y., Karapinar N.  
 COMPUTER PHYSICS COMMUNICATIONS, vol.207, pp.524-530, 2016 (SCI-Expanded)
- X. **ROTATIONAL PROPERTIES OF THE MARIA ASTEROID FAMILY**  
 KIM M. -, CHOI Y. -, MOON H. -, BYUN Y. -, Brosch N., KAPLAN M., KAYNAR S., UYSAL Ö., Guzel E., BEHREND R., et al.  
 ASTRONOMICAL JOURNAL, vol.147, no.3, 2014 (SCI-Expanded)
- XI. **Optical observations of NEA 162173 (1999 JU3) during the 2011-2012 apparition**  
 KIM M., CHOI Y., MOON H., ISHIGURO M., MOTTOLA S., KAPLAN M., KURODA D., Warjurkar D. S., Takahashi J., BYUN Y.  
 ASTRONOMY & ASTROPHYSICS, vol.550, 2013 (SCI-Expanded)
- XII. **Interactions between brown-dwarf binaries and Sun-like stars**  
 KAPLAN M., STAMATELLOS D., Whitworth A. P.  
 ASTROPHYSICS AND SPACE SCIENCE, vol.341, no.2, pp.395-403, 2012 (SCI-Expanded)
- XIII. **A Dynamic Era-Based Time-Symmetric Block Time-Step Algorithm with Parallel Implementations**  
 KAPLAN M., Saygin H.  
 PUBLICATIONS OF THE ASTRONOMICAL SOCIETY OF JAPAN, vol.64, no.3, 2012 (SCI-Expanded)
- XIV. **A time-symmetric block time-step algorithm for N-body simulations**  
 Makino J., HUT P., KAPLAN M., SAYGIN H.  
 NEW ASTRONOMY, vol.12, no.2, pp.124-133, 2006 (SCI-Expanded)
- XV. **A recursive algorithm for finding HDMR terms for sensitivity analysis**  
 KAYA H., KAPLAN M., SAYGIN H.  
 COMPUTER PHYSICS COMMUNICATIONS, vol.158, no.2, pp.106-112, 2004 (SCI-Expanded)

## Articles Published in Other Journals

- I. **Reflectivity of Venus's Dayside Disk During the 2020 Observation Campaign: Outcomes and Future Perspectives**  
 Lee Y. J., Muñoz A. G., Yamazaki A., Quémérais E., Mottole S., Hellmich S., Granzer T., Bergond G., Roth M., Gallego-Cano E., et al.  
 Planetary Science Journal, vol.3, no.9, 2022 (Scopus)
- II. **On the Lyapunov Time Estimations For Comet 1/P Halley**  
 KAPLAN M.  
 Cumhuriyet Science Journal, vol.43, no.1, pp.116-122, 2022 (Peer-Reviewed Journal)
- III. **Çok cisim İntegrasyonunda Zaman simetrik Ayırık Blok Zaman Adımlı Algoritma**  
 KAPLAN M., SAYGIN H.  
 İTÜ Dergisi Seri D: Mühendislik, vol.9, no.5, pp.57-67, 2010 (Peer-Reviewed Journal)

## Refereed Congress / Symposium Publications in Proceedings

- I. **OccultPortal: a web-based platform for data collection and analysis of stellar occultations**  
 Kilic Y., Braga-Ribas, F., KAPLAN M.  
 European Symposium on Occultation Projects, Freiburg, Germany, 29 - 30 August 2020, pp.20
- II. **The Non-Principal Axis rotation of (5247) Krylov**  
 Lee H., Durech J., Kim M., Moon H., Kim C., Choi Y., Galád A., Pray D., Marciniak A., KAPLAN M., et al.  
 EPSC-DPS Joint Meeting, Geneva, Switzerland, 15 - 20 September 2019
- III. **A-Track: a Tool for Detecting Moving Objects from Astronomical Images**  
 Kilic Y., KAPLAN M., Erece O.

Dynamics and Physics of Asteroids, TNOs and Natural Satellites in the New Era of Gaia Data, Antalya, Turkey, 4 - 06 September 2019

**IV. Performance of Akdeniz University Telescopes**

BAKİŞ V., IVANTSOV A., EKER Z., KAPLAN M., Yücel G., Aslan G., Dartıcı M. F.

Dynamics and Physics of Asteroids, TNOs and Natural Satellites in the New Era of Gaia Data, Antalya, Turkey, 4 - 06 September 2019

**V. The Photometric Study of Mars Crosser 2078 Nanking**

Kim D., Choi J., Kim M., Lee H., Durech J., Marciniak A., Kaminski K., KAPLAN M., Erece O., Moon H., et al.

Binary Asteroids 5, Fort Collins, United States Of America, 3 - 05 September 2019

**VI. Spin State of (5247) Krylov**

Lee H., Durech J., Kim C., Galad A., Pray D., KAPLAN M., Marciniak A., Duffard R., Kornos L., Gajdoš S., et al.

American Astronomical Society, DPS meeting #50, Tennessee, United States Of America, 21 - 26 October 2018, pp.414

**VII. KEEP-North: Photometric observations of the Baptistina asteroid family**

Kim M. -, Moon H. -, Lee H., Park J. -, Erece O., Kaynar S., KAPLAN M., CHOI Y., EKER Z., Lee S., et al.

IAU Focus Meetings (GA) A Century of Asteroid Families, Vienna, Austria, 28 September - 29 August 2018, pp.110

**VIII. First Astrometric Observations of Near-Earth Asteroids at the UBT60 Telescope of Akdeniz University**

IVANTSOV A., KAPLAN M., BAKIŞ V., EKER Z., TUNÇ E., ASLAN G.

Türk Fizik Derneği 34. Uluslararası Fizik Kongresi, Muğla, Turkey, 5 - 09 September 2018, pp.204

**IX. Dynamical Analyses for Asteroid 2018 AN2: A new candidate for Earth Co-orbitals**

KAPLAN M., Cengiz S.

Turkish Physical Society 34th International Physics Congress – TPS34, Muğla, Turkey, 5 - 09 September 2018, pp.100

**X. A new pipeline for astrometry and photometry of asteroids**

Kılıç Y., KAPLAN M., Eker Z.

IAU Focus Meetings (GA) A Century of Asteroid Families, Vienna, Austria, 28 - 29 August 2018, pp.100

**XI. Astrometry with A-Track Using Gaia DR1 Catalogue**

Kılıç Y., Erece O., KAPLAN M.

330th Symposium of the International-Astronomical-Union (IAU), Nice, France, 24 - 28 April 2017, vol.12, pp.94-95

**XII. A-Track: Ardışık Teleskop Görüntülerinden Hareketli Cisimlerin Otomatik Tespiti**

Karapınar N., Atay T., KAPLAN M., Kılıç Y.

20.Uluslararası Astronomi Kongresi 2016, Erzurum, Turkey, 5 - 09 September 2016, pp.100

**XIII. Astrometry and Photometry in Sky Areas of Karin Asteroids Family Members**

EKER Z., Birlan M., KAPLAN M., Erece O., Aslan G., Popescu M., Nedelcu M. ..

GAIA Follow-Up Network for the Solar System Objects, Paris, France, 24 - 26 November 2014, vol.3, pp.81-84

**XIV. Turkish Facilities to Meet GAIA Solar System ToO Observations**

Erece O., Eker Z., KAPLAN M., Aslan G. E., Birlan M.

Gaia-FUN-SSO-3 2014, Paris, France, 24 - 26 October 2014, pp.110

**XV. Astrometry and Photometry of Karin Asteroid Family Members**

Eker Z., Birlan M., KAPLAN M., Erece O., Aslan G. E.

Gaia-FUN-SSO-3 2014, Paris, France, 24 - 26 October 2014, pp.1

**XVI. Observational Properties Of 1999 Ju3 - Hayabusa 2 Mission Primary Target**

Kim M., Moon H., Mottola S., KAPLAN M., Ishiguro M., Kroda D., Warjurkar D., Takahashi J., Byun Y.

American Astronomical Society, DPS meeting #44, #110.03, Reno Nevada, United States Of America, 10 - 15 November 2012, pp.1-15

**XVII. Astrometric Observations of (1665) Gaby, and (1565) Lemaître Asteroids at Tubitak National Observatory (TUG)**

Uysal Ö., HELVACI M., IVANTSOV A., EKER Z., KAPLAN M., Özışık T., Kaynar S.

GAIA-FUN-SSO 2012 Second “Gaia Follow-up Network for Solar System Objects” Workshop, Paris, France, 19 - 21 September 2012

- XVIII. **Astrometric Observations of Some MBAs and NEAs at TUG and Observational Facilities of Akdeniz University**  
Kaynar S., EKER Z., HELVACI M., KAPLAN M.  
GAIA-FUN-SSO 2012 Second "Gaia Follow-up Network for Solar System Objects" Workshop, Paris, France, 19 - 21 September 2012
- XIX. **The Dynamics of Brown Dwarf Binaries**  
WHITWORTH A., KAPLAN M.  
International Conference on the Origin of Stellar Masses, Spain, 1 - 04 December 2010, pp.1-10
- XX. **The formation of brown dwarfs**  
Whitworth A., STAMATELLOS D., Walch S., Kaplan M., Goodwin S., Hubber D., Parker R.  
266th Symposium of the International-Astronomical-Union, Rio de Janeiro, Brazil, 10 - 14 August 2009, pp.264-265
- XXI. **The survival of BD/BD binaries in a fractal star cluster**  
KAPLAN M., WHITWORTH A.  
Conference on Brown Dwarf Formation, Netherlands, 1 - 04 October 2009, pp.1-10
- XXII. **Hermite integrations with TSBTS algorithm for N-body Problems**  
KAPLAN M., SAYGIN H.  
7th WSEAS Int Conference on Microelectron, Nanoelectron, Optoelectron/1st WSEAS Int Conference on Multivariate Anal and Its Applicat in Sci and Engn, Turkey, 1 - 04 October 2008, pp.174-178
- XXIII. **A Recursive Algorithm for Finding HDMR Terms for Sensitivity Analysis**  
Kaya H., KAPLAN M., SAYGIN H.  
Computational Methods in Sciences and Engineering, Kastoria, Greece, 12 September 2003
- XXIV. **Zamandan Bağımsız Schrödinger Denkleminin Çözümünde Çarpımsallaştırılmış Yüksek Boyutlu Model Gösterilim**  
SAYGIN H., KAPLAN M., DEMİRALP M.  
XII. Ulusal Mekanik Kongresi, Konya, Turkey, 1 - 04 October 2001, pp.380-386

## Supported Projects

ATAY T., KAPLAN M., TUBITAK Project, Ardışık Teleskop Görüntülerindeki Hareketli Cisimlerin Doğru Tanıma Algoritması İle Otomatik Tespit, 2015 - Continues

Bakış V., Kaplan M., TUBITAK Project, Duyarlılığı Arttırılmış Gözlemlerle Potansiyel Tehlikeli Asteroidlerin Astrometrisi, 2018 - 2022

KAPLAN M., TUBITAK Project, Yer Ile Eş-Yörüngelerdeki Asteroidlerin Yörünge Kararlılıklarının İncelenmesi, 2018 - 2019

KAPLAN M., Project Supported by Higher Education Institutions, Dünyaya Yakın Asteroidlere Kaynaklık Eden Asteroid Bölgelerinin Araştırılması, 2016 - 2018

## Memberships / Tasks in Scientific Organizations

International Astronomical Union (IAU), Member, 2020 - Continues

European Astronomical Society (EAS), Member, 2019 - Continues

Türk Astronomi Derneği, Member, 2018 - Continues

## Metrics

Publication: 42  
Citation (WoS): 96  
Citation (Scopus): 97

H-Index (WoS): 7

H-Index (Scopus): 6

## Congress and Symposium Activities

- American Astronomical Society, DPS meeting #50, Attendee, Tennessee, United States Of America, 2018
- Turkish Physical Society 34th International Physics Congress – TPS34, Attendee, Muğla, Turkey, 2018
- IAU Focus Meetings: A Century of Asteroid Families, Attendee, Vienna, Austria, 2018
20. Ulusal Astronomi Kongresi, Attendee, Erzurum, Turkey, 2016
- Gaia-FUN-SSO-3 2014, Attendee, Paris, France, 2014
- Observational astronomy using remote techniques: CODAM-10, Attendee, Paris, France, 2013
- American Astronomical Society / Division for Planetary Sciences Meeting, Attendee, Texas, United States Of America, 2012
- GAIA-FUN-SSO 2012: Second Gaia Follow-up Network for Solar System Objects, Attendee, Paris, France, 2012
- International Conference on the Origin of Stellar Masses, Attendee, Tenerife, Spain, 2010
- Conference on Brown Dwarf Formation, Attendee, Noordwijk, Netherlands, 2009
- IAU Symposium 2009, Attendee, Brazil, 2009
- International Conference on Multivariate Analysis and its Application in Science and Engineering (MAASE '08), Attendee, İstanbul, Turkey, 2008
- International Conference of Computational Methods in Sciences and Engineering (ICCMSE 2003), Attendee, Kastoria, Greece, 2003
- Akademik Bilişim, Attendee, Adana, Turkey, 2003
- XII Ulusal Mekanik Kongresi, Attendee, Konya, Turkey, 2001
- International Conference of Mathematical Modelling and Scientific Computing, Attendee, Ankara, Turkey, 2001