

# Mary Elizabeth Oksala

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California Lutheran University  
Department of Physics  
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## Education

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### Ph.D. in Astrophysics

University of Delaware

Advisor: Stanley P. Owocki

Thesis: Observations and models of centrifugally supported magnetospheres in massive stars

*September 2011*

Newark, DE

### B. S. in Physics

West Chester University of Pennsylvania

Cum Laude, with minors in Astronomy and Mathematics

*May 2004*

West Chester, PA

## Research Interests

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- Massive stars: evolution, stellar atmospheres and circumstellar environments
- Magnetism: massive-star wind interaction, effects on photosphere and magnetosphere
- Variable stars: abundance spots, photometric effects, spectral variability
- Techniques: photometry, spectroscopy, spectropolarimetry, optical and infrared observations

## Research Experience

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### Assistant Professor

Department of Physics

California Lutheran University

August 2016 - Present

### Postdoctoral Fellow

LESIA, Observatoire de Paris-Meudon

Advisor: Coralie Neiner

July 2014 - June 2016

### Postdoctoral Fellow

Academy of Sciences of the Czech Republic

Astronomical Institute of the Academy of Sciences of the Czech Republic

July 2013 - June 2014

### Postdoctoral Researcher

Astronomical Institute of the Academy of Sciences of the Czech Republic

Advisor: Michaela Kraus

Oct 2011 - June 2013

**Graduate Research Assistant**

2006-2007, Fall 2010

Department of Physics and Astronomy, University of Delaware

Advisor: Stanley Owocki

**Visiting Scholar**

Fall 2008, Fall 2009

Department of Physics, Royal Military College of Canada

Advisor: Gregg Wade

**NASA Space Grant Fellow**

2007-2009

Department of Physics and Astronomy, University of Delaware

**Undergraduate Research Assistant**

2002-2004

Department of Earth &amp; Space Sciences, West Chester University of Pennsylvania

Advisor: Marc Gagné

## Teaching Experience

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**Instructor of Record**

2016-Present

Department of Physics, California Lutheran University

Courses taught:

- PHYS 100 Introduction to Astronomy
- PHYS 100L Introduction to Astronomy Lab
- PHYS 110 Physical Science for Liberal Art Majors
- PHYS 110L Physical Science for Liberal Art Majors Lab
- PHYS 201L Mechanics and Thermodynamics-Algebra Lab
- PHYS 202L Electricity, Magnetism & Optics-Algebra Lab
- PHYS 211 Mechanics and Thermodynamics-Calculus
- PHYS 211L Mechanics and Thermodynamics-Calculus Lab
- PHYS 212 Electricity, Magnetism & Optics-Calculus
- PHYS 212L Electricity, Magnetism & Optics-Calculus Lab
- PHYS 340 Advanced Experimental Physics
- PHYS 4ST Special topics: Particle physics/Cosmology (co-taught)
- PHYS 4ST Special topics: Astrophysics
- PHYS 415 Thermodynamics and Statistical Physics

**Teaching Assistant**

2004-2006, Spring 2010,

Department of Physics and Astronomy, University of Delaware

Spring 2011

Courses taught:

- Introduction to Physics I (for non-science majors) - Discussion & Laboratory courses covering basic mechanics using algebraic techniques

- Introduction to Physics I (for science majors) - Laboratory course covering basic mechanics using calculus techniques
- Introduction to Astronomy - Laboratory course covering a wide variety of topics

## Professional Service + Memberships

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Institute seminar organizer	Sept. 2012 - June 2014
Astronomical Institute of the Academy of Sciences of the Czech Republic	
Journal Referee ApJ, IBVS, A&A, PASP	August 2015-present
ESO Observing Programmes Committee Panelist	November 2015, May 2016
Member of the International Astronomical Union	September 2015
SOC member, meeting: Stars with a stable magnetic field	September 2017
Brno, Czech Republic	
Reviewer Czech Science Foundation, Czech Republic	July 2018
Member of the American Astronomical Society	December 2018
SOC+LOC member, workshop: Stellar Magnetism and Spectropolarimetry	December 2018
Thousand Oaks, CA	
Reviewer National Science Centre, Poland	October 2019
SOC member, meeting: MOBSTER Collaboration Conference: Stellar variability as a probe of magnetic fields in massive stars	
Virtual meeting	
	July 2020

## Grants + Awards

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National Science Foundation Astronomy and Astrophysics Research Grant	July 2021
<i>Collaborative Research: New Models Of Stellar Evolution To Understand The Past, Present &amp; Future Of Magnetic Massive Stars</i>	
\$55,836, 3 year grant, Award Number: 2107871	
Distinguished Alumni Award	April 2021
Department of Physics and Engineering, West Chester University of PA	
College Dean's Award for Excellence in Undergraduate Advising	May 2020
College of Arts and Sciences, California Lutheran University	
Hewlett Faculty Development Grant, Cal Lutheran	September 2017
\$1250 to attend workshop BRITepol #3: BRITE Spectropolarimetric Survey Workshop	
Community Leaders Association Grant	January 2017
\$2000 Proposal to purchase telescopes for education and outreach	

## International Collaboration Memberships

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- Large Impact of magnetic Fields on massive star Evolution (LIFE) project 2015-Present  
*Science Steering Committee member*
- BRITE spectropolarimetric project 2014-2018  
*Working group leader — Be stars*
- UVMag/Arago Consortium 2014-Present

- Magnetism in Massive Stars (MiMeS) collaboration 2008-Present
- Binarity and Magnetic Interactions in various classes of Stars (BinaMIcS) project 2012-Present
- Whole Earth Telescope (WET) Project 2007-2011

## Refereed Publications

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1. Das, B., Chandra, P., Shultz, M. E., Wade, G. A., Sikora, J., Kochukhov, O., Neiner, C., **Oksala, M.E.**, Alecian, E.  
*Discovery of eight 'Main-sequence Radio Pulse emitters' using the GMRT: clues to the onset of coherent radio emission in hot magnetic stars*  
2021, *Astrophysical Journal*, submitted
2. Seach, J. M., Marsden, S. C., Carter, B. D., Neiner, C., Folsom, C. P., Mengel, M. W., **Oksala, M. E.**, Buyschaert, B.  
*A magnetic snapshot survey of F-type stars*  
2020, *Monthly Notices of the Royal Astronomical Society*, 494, 5682
3. Buyschaert, B., Neiner, C., Martin, A. J., **Oksala, M. E.**, Aerts, C., Tkachenko, A., Alecian, E., MiMeS Collaboration  
*Magnetic characterization and variability study of the magnetic SPB star o Lupi*  
2019, *Astronomy & Astrophysics*, 622, A67
4. Buyschaert, B., Neiner, C., Martin A.J., Aerts, C., Bowman, D.M., **Oksala, M.E.**, Van Reeth, T.  
*Detection of magnetic fields in chemically peculiar stars observed with the K2 space mission*  
2018, *Monthly Notices of the Royal Astronomical Society*, 478, 2777
5. Bowman, D.M., Buyschaert, B., Neiner, C., Pápics, P. I., **Oksala, M. E.**, Aerts, C.  
*K2 space photometry reveals rotational modulation and stellar pulsations in chemically peculiar A and B stars*  
2018, *Astronomy & Astrophysics*, 616A, 77
6. Martin, A.J., Neiner, C., **Oksala, M. E.**, & 6 other co-authors  
*First results from the LIFE project: discovery of two magnetic hot evolved stars*  
2018, *Monthly Notices of the Royal Astronomical Society*, 475, 1521
7. Alvarado-Gómez, J.D., Hussain, G.A.J., Drake, J. J., Donati, J.-F., Sanz-Forcada, J., Stelzer, B., Cohen, O., Amazo-Gómez, E.M., Grunhut, J.H., Garraffo, C., Moschou, S.P., Silvester, J., **Oksala, M.E.**  
*Far beyond the Sun: I. The beating magnetic heart of Horologium*  
2018, *Monthly Notices of the Royal Astronomical Society*, 473, 4326
8. **Oksala, M. E.**, Silvester, J., Kochukhov, O., Neiner, C., Wade, G. A. & The MiMeS Collaboration  
*Mixed poloidal-toroidal magnetic configuration and surface abundance distributions of the Bp star 36 Lyn*  
2018, *Monthly Notices of the Royal Astronomical Society*, 473, 3367
9. Kraus, M., Liimets, T., Cappa, C. E., Cidale, L. S., Nickeler, D. H., Duronea, N. U., Arias, M. L., Gunawan, D. S., **Oksala, M. E.**, & 3 other co-authors  
*Resolving the Circumstellar Environment of the Galactic B[e] Supergiant Star MWC 137 from Large to Small Scales*  
2017, *Astronomical Journal*, 154, 186

10. Neiner, C., **Oksala, M. E.**, & 9 other co-authors  
*Discovery of magnetic A supergiants: the descendants of magnetic main sequence B stars*  
2017, Monthly Notices of the Royal Astronomical Society, 471, 1926
11. Buyschaert, B., Neiner, C., Richardson, N. D., Ramiamanantsoa, T., David-Uraz, A., Pable, H., P., **Oksala, M. E.**, & 10 additional co-authors  
*Studying the photometric and spectroscopic variability of the magnetic hot supergiant zeta Orionis Aa*  
2017, Astronomy & Astrophysics, 602, A91
12. Grunhut, J. H., Wade, G. A., Neiner, C., **Oksala, M.E.** & 7 additional co-authors  
*The MiMeS Survey of Magnetism in Massive Stars : magnetic analysis of the O-type stars*  
2017, Monthly Notices of the Royal Astronomical Society, 465, 2432
13. Kurapati, S., Chandra, P., Wade, G., Cohen, D. H., David-Uraz, A., Gagne, M., Grunhut, J. H., **Oksala, M. E.**, & 5 additional co-authors  
*A JVLA survey of the high-frequency radio emission of the massive magnetic B-a and O-type stars*  
2017, Monthly Notices of the Royal Astronomical Society, 465, 2160
14. Wade, G. A., Neiner, C., Alecian, E., Grunhut, J. H., Petit, V., de Batz, B., Bohlender, D. A., Cohen, D. H., Henrichs, H. F., Kochukhov, O., Landstreet, J. D., Manset, N., Martins, F., Mathis, S., **Oksala, M. E.**, & 36 additional co-authors  
*The MiMeS Survey of Magnetism in Massive Stars: Introduction and overview*  
2016, Monthly Notices of the Royal Astronomical Society, 456, 2
15. Hussain, G. A. J., Alvarado-Gomez, J. D., Grunhut, J., Donati, J-F., Alecian, E., **Oksala, M.**, & 9 additional co-authors  
*A spectro-polarimetric study of the planet-hosting G dwarf, HD 147513*  
2016, Astronomy & Astrophysics, 585, 77
16. Alvarado-Gomez, J. D., Hussain, G.A. J., Grunhut, J., Fares, R., Donati, J-F., Alecian, E., Kochukhov, O., **Oksala, M.**, & 8 additional co-authors  
*Activity and Magnetic Field Structure of the Sun-Like Planet Hosting Star HD 1237*  
2015, Astronomy & Astrophysics, 582, A38
17. Neiner, C, Buyschaert, B., **Oksala, M.E.**, Blazere, A.  
*Discovery of two new bright magnetic B stars: i Car and Atlas*  
2015, Monthly Notices of the Royal Astronomical Society, 454, L56
18. Kraus, M., Haucke, M., Cidale, L.S., Venero, R.O.J., Nickeler, D. H., Németh, P., Niemczura; E., Tomic, S.; Aret, A., Kubat, J., Kubatova, B., **Oksala, M.E.**, Kaminski, K., Dimitrov, W., Fagas, M., & Polinska, M.  
*The interplay between pulsations and mass loss in the blue supergiant 55 Cygnus = HD 198478*  
2015, Astronomy & Astrophysics, 581, A75
19. Chandra, P., Wade, G. A., Sundqvist, J. O., Oberoi, D., Grunhut, J. H., ud-Doula, A., Petit, V., Cohen, D. H., **Oksala, M. E.**, David-Uraz, A.  
*First detections of 610 MHz radio emission from hot magnetic stars*  
2015, Monthly Notices of the Royal Astronomical Society, 452, 1245
20. Sikora, J., Wade, G. A., Bohlender, D. A., Neiner, C., **Oksala, M. E.**, Shultz, M., Cohen, D. H., ud-Doula, A., Grunhut, J., Monin, D., Owocki, S., Petit, V., Rivinius, T., Townsend, R. H. D.  
*Confirming HD 23478 as a new magnetic B star hosting an H $\alpha$ -bright centrifugal magnetosphere*  
2015, Monthly Notices of the Royal Astronomical Society, 451, 1928

21. **Oksala, M. E.**, Kochukhov, O., Krticka, J., Townsend, R.H.D, Wade, G. A., Prvak, M., Mikulasek, Z., Silvester, J., Owocki, S.  
*Revisiting the Rigidly Rotating Magnetosphere model for sigma Ori E - II. Magnetic Doppler imaging, arbitrary field RRM, and light variability*  
2015, Monthly Notices of the Royal Astronomical Society, 451, 2015
22. **Oksala, M. E.**, Grunhut, J. H., Kraus, M., Borges Fernandes, M., Neiner, C., Condori, C. A. H., Campagnolo, J. C. N., Souza, T. B.  
*An infrared diagnostic for magnetism in hot stars*  
2015, Astronomy & Astrophysics, 578, A112
23. Kraus, M., **Oksala, M. E.**, Cidale, L. S., Arias, M. L., Torres, A. F., Borges Fernandes, M.  
*Discovery of SiO band emission from Galactic B[e] supergiants*  
2015, Astrophysical Journal Letters, 800, 20
24. Muratore, M. F., Kraus, M., **Oksala, M. E.**, Arias, M. L., Cidale, L., Borges Fernandes, M., & Liermann, A.  
*Evidence of the Evolved Nature of the B[e] Star MWC 137*  
2015, Astronomical Journal, 149, 13
25. Alecian, E., Kochukhov, O., Petit, V., Grunhut, J., Landstreet, J., **Oksala, M. E.**, Wade, G. A., Hussain, G., Neiner, C., Bohlender, D., & the MiMeS Collaboration  
*Discovery of new magnetic early-B stars within the MiMeS HARPSpol survey*  
2014, Astronomy & Astrophysics, 567, A28
26. Kraus, M., Cidale, L. S., Arias, M. L., **Oksala, M. E.**, & Borges Fernandes, M.  
*Discovery of the First B[e] Supergiants in M 31*  
2014, Astrophysical Journal Letters, 780, 10
27. **Oksala, M. E.**, Kraus, M., Cidale, L. S., Muratore, M. F., & Borges Fernandes, M.  
*Probing the ejecta of evolved massive stars in transition. A VLT/SINFONI K-band survey*  
2013, Astronomy & Astrophysics, 558, A17
28. Petit, V., Owocki, S. P., Wade, G. A., Cohen, D. H., Sundqvist, J. O., Gagné, M., Maíz Apellàniz, J., **Oksala, M. E.**, Bohlender, D. A., Rivinius, Th., Henrichs, H. F., Alecian, E., Townsend, R. H. D., ud-Doula, A., & the MiMeS Collaboration  
*A Magnetic Confinement vs. Rotation Classification of Massive-Star Magnetospheres*  
2013, Monthly Notices of the Royal Astronomical Society, 429, 398
29. Kraus, M., **Oksala, M. E.**, Nickeler, D. H., Muratore, M. F., Borges Fernandes, M., Aret, A., Cidale, L.S., & de Wit, W. J.  
*Molecular emission from GG Car's circumbinary disk*  
2013, Astronomy & Astrophysics, 549, A28
30. Borges Fernandes, M., Kraus, M., Nickeler, D. H., De Cat, P., Lampens, P., Pereira, C.B., & **Oksala, M. E.**  
*The galactic unclassified B[e] star HD 50138: III. The short term line profile variability of its photospheric lines*  
2012, Astronomy & Astrophysics, 548, A13
31. **Oksala, M. E.**, Kraus, M., Arias, M. L., Borges Fernandes, M., Cidale, L., Muratore, M. F., & Cure, M.

- The sudden appearance of CO emission in LHA 115-S 65*  
2012, Monthly Notices of the Royal Astronomical Society, 426, L56
32. Henrichs, H. F., Kolenberg, K., Plaggenborg, B., Marsden, S. C., Waite, I. A., Landstreet, J. D., Wade, G. A., Grunhut, J. H., **Oksala, M. E.**, & the MiMeS Collaboration  
*Discovery of a magnetic field in the early B-type star sigma Lupi*  
2012, Astronomy & Astrophysics, 545, A119
33. Kraus, M., Tomic, S., **Oksala, M. E.**, & Smole, M.  
*Detection of a 1.59 h period in the B supergiant star HD 202850*  
2012, Astronomy & Astrophysics, 542, L32
34. **Oksala, M. E.**, Wade, G. A., Townsend, R. H. D., Owocki, S. P., Kochukhov, O., Neiner, C., Alecian, E., Grunhut, J., & the MiMeS Collaboration  
*Revisiting the Rigidly Rotating Magnetosphere model for sigma Ori E - I. Observations and data analysis*  
2012, Monthly Notices of the Royal Astronomical Society, 419, 959
35. Alecian, E., Kochukhov, O., Neiner, C., Wade, G. A., deBatz, B., Henrichs, H., Grunhut, J. H., Bouret, J., Briquet, M., Gagne, M., Naze, Y., **Oksala, M. E.**, Rivinius, T., Townsend, R. H. D., Walborn, N. R., Weiss, W., & the MiMeS Collaboration  
*First HARPSpol discoveries of magnetic fields in massive stars*  
2011, Astronomy & Astrophysics, 536, L6
36. Redaelli, M., Kepler, S. O., Costa, J. E. S., Winget, D. E., Handler, G., Castanheira, B. G., Kanaan, A., Fraga, L., Henrique, P., Giovannini, O., Provencal, J. L., Shipman, H. L., Dalessio, J., Thompson, S. E., Mullally, F., Brewer, M. M., Childers, D., **Oksala, M. E.**, & 60 additional coauthors  
*The pulsations of PG 1351+489*  
2011, Monthly Notices of the Royal Astronomical Society, 415, 1220
37. **Oksala, M. E.**, Wade, G. A., Marcolino, W. L. F., Grunhut, J., Bohlender, D., Manset, N., Townsend, R. H. D., & The MiMeS Collaboration  
*Discovery of a strong magnetic field in the rapidly rotating B2Vn star HR 7355*  
2010, Monthly Notices of the Royal Astronomical Society, 405, L51.
38. Townsend R. H. D., **Oksala M. E.**, Cohen D. H., Owocki S. P., & ud-Doula A.  
*Discovery of Rotational Braking in the Magnetic Helium-Strong Star Sigma Orionis E*  
2010, Astrophysical Journal Letters, 714, L318.
39. Gagné M., **Oksala M. E.**, Cohen D. H., Tonnesen S. K., ud-Doula A., Owocki S. P., Townsend R. H. D., & MacFarlane J. J.  
*Erratum: "Chandra HETGS Multiphase Spectroscopy of the Young Magnetic O Star Theta 1 Orionis C" (Astrophysical Journal, 628, 986 [2005])*  
2005, Astrophysical Journal, 634, 712.
40. Gagné M., **Oksala M. E.**, Cohen D. H., Tonnesen S. K., ud-Doula A., Owocki S. P., Townsend R. H. D., & MacFarlane J. J.  
*Chandra HETGS Multiphase Spectroscopy of the Young Magnetic O Star Theta 1 Orionis C*  
2005, Astrophysical Journal, 628, 986.

## Conference Proceedings

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1. Oksala, M. E., Seadrow, S., Petit, V.  
*Infrared Spectropolarimetry of Magnetic Massive Stars*  
IAUS 360: Astronomical Polarimetry 2020 - New Era of Multi-Wavelength Polarimetry, in press
2. Neiner, C., Martin, A., Wade, G., **Oksala, M.**  
*The magnetic field of evolved hot stars*  
SF2A-2018: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics. Eds.: P. Di Matteo, F. Billebaud, F. Herpin, N. Lagarde, J.-B. Marquette, A. Robin, O. Venot, pp.319-322
3. Buyschaert, B., Neiner, C., Martin, A.J., **Oksala, M. E.**, Aerts, C.  
*Detecting magnetic fields in Ap/Bp stars observed with the K2 space mission*  
Contributions of the Astronomical Observatory Skalnaté Pleso, vol. 48, no. 1, p. 82-86
4. **Oksala, M. E.**  
*Observational signatures of hot-star magnetospheres*  
In The Lives and Death-Throes of Massive Stars, IAU Symposium No. 329, 2017, pp.433-433
5. **Oksala, M. E.**, Neiner, C., Georgy, C., Przybilla, N., Keszthelyi, Z., Wade, G., Mathis, S., Blazère, A., Buyschaert, B.  
*The evolution of magnetic fields in hot stars*  
In The Lives and Death-Throes of Massive Stars, IAU Symposium No. 329, 2017, pp. 141-145
6. Kraus, M., Cidale, L. S., Liimets, T., Cappa, C. E., Duronea, N., Gunawan, D. S., **Oksala, M. E.**, & 6 additional coauthors  
*Clumpy Molecular Structures Revolving the B[e] Supergiant MWC 137*  
In The B[e] Phenomenon: Forty Years of Studies, ed. A. Miroshnichenko, S. Zharikov, D. Korčáková, M. Wolf, ASP Conference Series Vol. 508, pp. 381-382, 2017
7. **Oksala, M. E.**, Kochukhov, O., Krticka, J., Prvak, M., & Mikulasek, Z.  
*Unraveling the variability of sigma Ori E*  
In New Windows on Massive Stars: Asteroseismology, Interferometry, and Spectropolarimetry, ed. G. Meynet, C. Georgy, J. H. Groh, Ph. Stee, IAU Symposium No. 307, pp. 348-352, 2015
8. Tomic, S., Kraus, M., & **Oksala, M.**  
*Spectral Effects of Pulsations in Blue Supergiants*  
In New Windows on Massive Stars: Asteroseismology, Interferometry, and Spectropolarimetry, ed. G. Meynet, C. Georgy, J. H. Groh, Ph. Stee, IAU Symposium No. 307, pp. 235-236, 2015
9. Tomic, S., Kraus, M., & **Oksala, M.**  
*Pulsations in the Late-type B Supergiant Star HD 202850*  
In Precision Asteroseismology, eds. W. Chaplin, J. Guzik, G. Handler, A. Pigulski, IAU Symposium No. 301, pp. 503-504, 2014
10. **Oksala, M. E.**, Kraus, M., Cidale, L., Muratore, M. F., & Borges Fernandes, M.  
*Probing the ejecta of evolved massive stars in transition*  
ID 173, Massive Stars: From  $\alpha$  to  $\Omega$ , Rhodes, Greece, 2013
11. Kraus, M., Cidale, L. S., Arias, M. L., Torres, A. F., Aret, A., Borges Fernandes, M., Muratore, F., Cure, M., & **Oksala, M. E.**  
*Tracing the mass-loss history of B[e] supergiants*  
ID 160, Massive Stars: From  $\alpha$  to  $\Omega$ , Rhodes, Greece, 2013



12. Tomic, S., Kraus, M., **Oksala, M.**, Smole, M.  
*Pulsations in the Late-type B Supergiant Star HD 202850*  
Publications of the Astronomical Observatory of Belgrade, Vol. 92, pp. 201-204, 2013
13. Petit, V., Owocki, S. P., **Oksala, M. E.**, & the MiMeS Collaboration  
*Magnetospheres of massive stars across the EM spectrum*  
ASP Conf. Ser. 465, p. 48, 2013
14. Alecian, E., Peralta, R., **Oksala, M. E.**, Neiner, C., & the MiMeS Collaboration  
*The Magnetism in Massive Stars project: first HARPSpol discoveries*  
SF2A-2012: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics. Eds.: S. Boissier, P. de Laverny, N. Nardetto, R. Samadi, D. Valls-Gabaud and H. Wozniak, pp. 401-404, 2012
15. Henrichs, H. F., Kolenberg, K., Plaggenborg, B., Marsden, S. C., Waite, I. A., Landstreet, J., Grunhut, J., **Oksala, M.**, Wade, G., & the MiMeS Collaboration  
*Discovery of the magnetic field of the B1/B2V star  $\sigma$  Lupi*  
In AIP Conf. Proc. Vol 1429, Stellar Polarimetry: From Birth to Death, ed. J.L. Hoffman, J. Bjorkman, & B. Whitney, pp. 90-93, 2012
16. Torres, A. F., **Oksala, M. E.**, Cidale, L. S., Kraus, M., Borges Fernandes, M., & Barba, R.  
*Spectroscopic study of the B[e] supergiant LHA 120-S 35*  
Boletín de la Asociación Argentina de Astronomía, Vol. 55, pp. 155-159, 2012
17. **Oksala, M. E.**, Wade, G. A., Marcolino, W. L. F., Grunhut, J. H., Bohlender D., Manset, N., Townsend, R. H. D., & the MiMeS Collaboration  
*Discovery of a strong rapidly rotating B2Vn star HR 7355*  
In Active OB Stars: structure, evolution, mass-loss, and critical limits, ed. C. Neiner, G. Wade, G. Meynet, & G. Peters, IAU Symposium No. 272, pp. 204-205, 2011
18. Kochukhov, O., Rivinius, T., **Oksala, M. E.**, & Romanyuk, I.  
*Magnetic Doppler imaging of early-type stars*  
In Active OB Stars: structure, evolution, mass-loss, and critical limits, ed. C. Neiner, G. Wade, G. Meynet, & G. Peters, IAU Symposium No. 272, pp. 166-171, 2011
19. **Oksala, M. E.**, Wade, G. A., Townsend, R. H. D., Kochukhov, O., & Owocki, S. P.  
*Modeling the magnetosphere of the B2Vp star  $\sigma$  Ori E*  
In Active OB Stars: structure, evolution, mass-loss, and critical limits, ed. C. Neiner, G. Wade, G. Meynet, & G. Peters, IAU Symposium No. 272, pp. 124-129, 2011
20. Wade, G. A., Alecian, E., Bohlender, D. A., Bouret, J., Cohen, D. H., Duez, V., Gagne, M., Grunhut, J., Henrichs, H.F., Hill, N. R., Kochukhov, O., Mathis, S., Neiner, C., **Oksala, M. E.**, Owocki, S., Petit, V., Shultz, M., Rivinius, T., Vink, J. S., & the MiMeS Collaboration  
*The MiMeS project: overview and current status*  
In Active OB Stars: structure, evolution, mass-loss, and critical limits, ed. C. Neiner, G. Wade, G. Meynet, & G. Peters, IAU Symposium No. 272, pp. 118-123, 2011
21. **Oksala, M. E.** & Townsend, R. H. D.  
*New Photometric Observations of  $\sigma$  Ori E*  
In Active OB-Stars: Laboratories for Stellar & Circumstellar Physics, eds. Stefl, S., Owocki, S. P., & Okazaki, A., ASP Conf. Ser. 361, p. 476, 2007
22. **Oksala, M. E.**, Gagné, M., Cohen, D. H., Tonnesen, S. K., Ud-Doula, A., Owocki, S. P., Townsend, R. H. D., Macfarlane, J. J.  
*The Young Magnetic O Star Theta 1 Ori C: Multi-phase Chandra Grating Spectra*

In *The Nature and Evolution of Disks Around Hot Stars*, eds. Ignace, R. & Gayley, K. G., ASP Conf. Ser. 337, p. 289, 2005

## Seminars, conference talks, & posters

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1. OBA Stars: Variability and Magnetic Fields (STARS-2021), St. Petersburg, Russia and Virtually, April 2021  
Talk, Speaker: Etienne Boucher, Magnetic monitoring of 4 A-F supergiants: evidence for fossil and dynamo magnetic fields
2. OBA Stars: Variability and Magnetic Fields (STARS-2021), St. Petersburg, Russia and Virtually, April 2021  
Talk, Speaker: Coralie Neiner, The evolution of magnetic fields in hot stars and of the magnetic desert
3. IAU Symposium #360: Astronomical Polarimetry 2020 - New Era of Multi-Wavelength Polarimetry, Hiroshima, Japan and Virtually, March 2021  
Poster: Infrared Spectropolarimetry of Magnetic Massive Stars
4. MOBSTER-1 virtual conference: Stellar variability as a probe of magnetic fields in massive stars, Virtual, July 2020  
Talk: New results of the LIFE project: characterization of the A5Ib-II supergiant 19 Aur and the newest sample of magnetic stars
5. American Astronomical Meeting #235, Honolulu, HI, USA, January 2020  
Poster: New results of the LIFE project: characterization of the A5Ib-II supergiant 19 Aur and the newest sample of magnetic stars
6. American Astronomical Meeting #233, Seattle, WA, USA, January 2019  
Poster: Magnetic hot giants and supergiants: The descendants of magnetic main sequence massive stars
7. BRITepol #3: BRITe Spectropolarimetric Survey Workshop, Meudon France. November 2017  
Talk: Bright magnetic stars in the IR
8. Math Department, California Lutheran University, Thousand Oaks, CA, September 2017  
Seminar: Measurement of Simple, Large-scale Magnetic Fields
9. IAU Symposium #329, "The Lives and Death-Throes of Massive Stars", Auckland, New Zealand, November 2016  
Talk: The evolution of magnetic fields in hot stars  
Poster: Observational signatures of hot-star magnetospheres
10. BRITepol #2: BRITe Spectropolarimetric Survey Workshop, Meudon France. November 2016  
Remote Talk: Progress report on magnetic massive supergiants  
Remote Talk: High resolution analysis of the magnetic field and rotational parameters of 36 Lyn
11. Canada-France-Hawaii Telescope 11th Users' Meeting, Nice, France, May 2016  
Talk: Multi-wavelength studies of hot-star magnetospheres
12. 4th BinaMIcS Workshop, Melbourne, FL, December 2016  
Talk: Magnetospheres in the IR  
Talk: The magnetic field of 36 Lyn

13. American Astronomical Society Meeting #227, Kissimmee, Florida, USA, December 2016  
Talk: Massive-Star Magnetospheres in the Near-Infrared, id.129.03
14. Action Fédératrice Etoiles de l'Observatoire de Paris Forum, Meudon, France, November 2015  
Talk: Recent results of the BinaMIcS survey
15. BRITepol: BRITE Spectropolarimetric Survey Workshop, Meudon, France, October 2015  
Talk: The descendants of magnetic massive stars: BRITE magnetic hot supergiants
16. ESO Headquarters, Vitacura, Chile, July 2015  
Seminar: Massive-star magnetospheres in the NIR
17. European Week of Astronomy and Space Science (EWASS), Tenerife, Spain, June 2015  
Invited Review (Special Session): The influence of magnetic fields on the circumstellar environments of hot stars
18. Action Fédératrice Etoiles de l'Observatoire de Paris Forum, Meudon, France, November 2014  
Talk: Massive-star magnetospheres in the NIR
19. First SPIrou Science Meeting, Paris, France, September 2014  
Talk: Massive-star magnetospheres in the NIR
20. Magnetism and Variability in O stars, Amsterdam, Netherlands, September 2014  
Talk: Massive-star magnetospheres in the NIR
21. IAU Symposium #307, New Windows on Massive Stars: Asteroseismology, Interferometry, and Spectropolarimetry, June 2014  
Talk: Unraveling the variability of  $\sigma$  Ori E
22. Massive Stars: From  $\alpha$  to  $\Omega$ , Rhodes, Greece, June 2013  
Poster: Probing the ejecta of evolved massive stars in transition
23. Stellar Department, Astronomical Institute AVCR, Ondrejov, Czech Republic, April 2013  
Seminar: Investigating the mass-loss history of evolved massive stars
24. Workshop on Stellar Astrophysics at Observatorio Nacional: Stellar Evolution and Stars in Transition Phases, Rio de Janeiro, Brazil, December 2012  
Talk: Results of the VLT/SINFONI K-band spectral survey of evolved massive stars
25. Tartu Observatory, Tartu, Estonia, November 2012  
Seminar: Centrifugally Supported Massive Star Magnetospheres
26. Masaryk University, Brno, Czech Republic, October 2012  
Seminar: Massive Star Magnetospheres: From X-ray to Radio
27. Astronomical Institute AVCR, Ondrejov, Czech Republic, May 2012  
Institute Seminar: Massive Star Magnetospheres: From X-ray to Radio
28. Stellar Department, Astronomical Institute AVCR, Ondrejov, Czech Republic, November 2011  
Seminar: Observations and Models of Magnetic Massive Stars
29. IAU Symposium #272: Active OB Stars: structure, evolution, mass-loss, and critical limits, July 2010  
Poster: Discovery of a strong magnetic field in the rapidly rotating B2Vn star HR 7355
30. IAU Symposium #272: Active OB Stars: structure, evolution, mass-loss, and critical limits, July 2010  
Talk: Spectropolarimetric observations of the B2Vp star  $\sigma$  Ori E

31. IAU Symposium #250: Massive Stars as Cosmic Engines, Kauai, HI USA, December 2007  
Poster: A Magnetosynthesis Model for Massive Stars
32. Active OB Stars: Laboratories for Stellar & Circumstellar Physics, ASP Conf. Ser. 361,  
Sapporo, Japan, September 2005  
Poster: New Photometric Observations of  $\sigma$  Ori E

## Telescope Time Awarded

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PI or co-I on the following successful observing proposals:

### 2021

- **PI: Oksala**, *Characterizing the magnetic fields of 19 Aur*, 2021(B), TBL/Narval, ID: L212N06, 6.2 hours
- **PI: Oksala**, *Monitoring the magnetic fields of the hot supergiant stars 13 Mon, 19 Aur and Eta Leo: Understanding stellar magnetism at advanced evolutionary phases*, 2021(B), CFHT/Espadons, ID: 21BF22, 9.2 hours
- **PI: Oksala**, *Two new candidate magnetic massive stars identified from IR emission signatures*, 2021(B), CFHT/Espadons, 21BF24, 3 hours

### 2020

- **PI: Oksala**, *Characterizing the magnetic fields of 19 Aur*, 2020(B), TBL/Narval, ID: L202N12, 6.2 hours
- **PIs: Wade**, *Characterizing the magnetic fields of early-type giants and supergiants*, 2020(B), joint French+Canadian proposal for CFHT/Espadons, ID: 20BC032, 20 hours
- **PI: Oksala**, *Characterizing the magnetic fields of early-type giants and supergiants*, 2020(A), CFHT/Espadons, ID: 20AF016, 20 hours

### 2019

- **PI: Oksala**, *Characterizing the magnetic evolved hot star 19 Aur*, 2019(B) Director's Discretionary Time, CFHT/Espadons, ID: 19BD94, 1.9 hours
- **PI: Wade**, *Characterisation of the magnetic fields of early-type giants and supergiants*, 2019(B), CFHT/Espadons, ID: 19BC23, 22 hours
- **PIs: Wade and Neiner**, *Characterization of the magnetic fields of early-type giants: testing the principle of stellar magnetic flux conservation*, 2019(A), joint French+Canadian proposal for CFHT/Espadons, IDs: 19AC14 and 19AF20, 22 hours

### 2018

- **PI: Martin**, *Characterization of magnetic fields of early type giants: testing the principle of stellar magnetic flux conservation*, 2018, ESO/3.6 m/HARPS, ID: 0101.D-0091, 3.5 nights
- **PIs: Wade and Martin**, *Characterisation of the magnetic evolved hot stars 13 Mon, 19 Aur and eta Leo*, 2018(B), joint French+Canadian proposal for CFHT/Espadons, IDs: 18BC08 and 18BF06, 15.95 hours

- **PIs: Wade and Martin**, *Characterization of the magnetic fields of early-type giants: testing the principle of stellar magnetic flux conservation*, 2018(B), joint French+Canadian proposal for CFHT/Espadons, IDs: 18BC009 and 18BF007, 22 hours
- **PIs: Wade and Martin**, *Characterisation of the magnetic evolved hot star HD167686*, 2018(A), joint French+Canadian proposal for CFHT/Espadons, IDs: 18AC010 and 18AF014, 1.35 hours
- **PIs: Wade and Martin**, *Characterization of the magnetic fields of early-type giants: testing the principle of stellar magnetic flux conservation*, 2018(A), joint French+Canadian proposal for CFHT/Espadons, IDs: 18AC011 and 18AF013, 13.1 hours

## 2017

- **PI: Martin**, *Characterization of magnetic fields of early type giants: testing the principle of stellar magnetic flux conservation*, 2017, ESO/3.6 m/HARPS, ID: 0100.D-0776, 4.3 nights
- **PIs: Wade and Oksala**, *Characterization of the magnetic fields of early-type giants: testing the principle of stellar magnetic flux conservation*, 2017(B), joint French+Canadian proposal for CFHT/Espadons, IDs: 17BC018 and 17BF016, 31 hours
- **PIs: Wade and Oksala**, *Characterization of the magnetic fields of early-type giants: testing the principle of stellar magnetic flux conservation*, 2017(A), joint French+Canadian proposal for CFHT/Espadons, IDs: 17AF026 and 17AC025, 12 hours
- **PI: Oksala**, *Optical spectroscopy of IR emission line stars*, 2017(A), CFHT/Espadons, ID:17AF019, Snapshot/Bad weather proposal, 2.1 hours
- **PI: Neiner**, *Spectropolarimetric follow-up of BRITE asteroseismic targets*, 2017, TBL/Narval, 57.2 hours

## 2016

- **PIs: Keszthelyi and Oksala**, *A sensitive search for weak magnetic fields in hot evolved stars*, 2016(B), joint French+Canadian proposal for CFHT/Espadons, IDs: 16BC004 and 16BF005, 18.9 hours
- **PIs: Keszthelyi and Oksala**, *A first sensitive search for weak magnetic fields in hot, evolved high mass stars*, 2016(A), joint French+Canadian proposal for CFHT/Espadons, IDs: 16AF030 and 16AC039, 27.2 hours
- **PI: Buysschaert**, *Detecting magnetic fields in AP/Bp stars observed with K2*, 2016, CFHT/Espadons, ID:16AF012, 9.1 hours
- **PI: Kraus**, *Resolving the structure and kinematics of B[e] supergiant stars' disks*, 2016, ESO/VLT/SINFONI, ID: 097.D-0033, 3 hours
- **PI: Neiner**, *Characterization of four magnetic hot stars discovered in the spectropolarimetric survey of BRITE asteroseismic targets*, 2016, ESO/3.6 m/HARPS, 097.D-00156, 5 nights
- **PI: Borges Fernandes**, *Characterizing the magnetosphere of the extremely rapidly rotating Bp star HR 5907 via IR spectra*, 2016, SOAR/OSIRIS, ID:2016A-001, 20 hours

## 2015

- **PI: Oksala**, *Characterizing the newly discovered magnetic field of the IR emission star HD 23478*, 2015, TBL/Narval, 42 hours
- **PI: Neiner**, *Characterization of four magnetic hot stars discovered in the spectropolarimetric survey of BRITE asteroseismic targets*, 2015, ESO/3.6 m/HARPS, 096.D-0072, 6.2 nights

- PI: Neiner, *Spectropolarimetric observations of BRITE asteroseismic targets: a complete census of magnetic fields in bright stars up to  $V=4$* , 2015, ESO3.6 m/HARPS, ID: 095.D-0155, 6 nights
- **PI: Oksala**, *Studying the magnetosphere of the magnetic massive stars HR 7355 via its IR emission features*, 2015, ESO/VLT/SINFONI, ID: 095.D-0613, 6.5 hours
- PI: Grunhut, *Characterizing the magnetosphere of the new magnetic Bp star HD 23478 via IR emission features*, 2015, GEMINI/GNIRS, ID: GN-2015B-Q-48, 3.4 hours
- PI: Borges Fernandes, *Characterizing the magnetosphere of the prototypical Bp star sigma Ori E via IR emission features*, 2015, SOAR/OSIRIS, ID: 2015B-005, 25 hours
- PI: Borges Fernandes, *Characterizing low-density, optically undetected magnetospheres with IR spectroscopy*, 2015, SOAR/OSIRIS, 17 hours
- PI: Borges Fernandes, *Studying the magnetosphere of the magnetic massive star HR 7355 via its IR emission*, 2015, SOAR/OSIRIS, 16 hours
- PI: Neiner, *Spectropolarimetric observations of BRITE asteroseismic targets: a complete census of magnetic fields in bright stars up to  $V=4$* , 2015, ESO3.6 m/HARPS, ID: 094.D-0274, 6 nights
- PI Grunhut, *Probing the magnetic properties of extremely massive stars*, 2015, ESO/VLT/FORS2, ID: 094.D-0533, 6.2 hours
- PI: Kubát, *Submillimetre observations with ARTEMIS: a key to constrain clumping and determine precise mass-loss rates in massive stars*, 2015, ESO/APEX/ARTMIS, ID: 0.95.D-0550, 29.1 hours
- PI Kraus, *Resolving the inner structure and kinematics of the nebula around the unclassified Galactic B[e] star MWC 137*, 2015, ESO/VLT/SINFONI, ID: 094.D-0637, 0.8 hours
- **PI: Oksala**, *IR diagnostics as a tool to study low density magnetospheres*, 2015, ESO/VLT/SINFONI, ID: 094.D-0709, 1.1 hours

## 2014

- PI: Grunhut, *Are stellar mergers the key to understanding the phenomenon of magnetism in higher mass stars?*, 2014, ESO/3.6 m/HARPS, ID: 093.D-0367, 4 nights
- PI: Sikora, *Characterizing the magnetic fields of two recently discovered rare sigma Ori E type stars*, 2014, CFHT/Espadons. ID: 14BC011, 10.4 hours
- PI: Kraus, *Studying the structure and kinematics of disk around evolved massive stars using SiO band head emission*, 2014, ESO/VLT/CRIRES, ID: 093.D-0248, 12.7 hours
- PI: Kubát, *Submillimetre observations with LABOCA and SABOCA: a key to constrain clumping and determine precise mass-loss rates in massive stars*, 2014, ESO/APEX/LABOCA, ID: 092.D-0299, 13 hours
- PI: Kraus, *Disentangling the population of evolved massive stars in the galaxy M33*, 2014, ESO/VLT/KMOS, ID: 092.D-0256, 16.1 hours

## 2013

- PI: Curé,  *$^{13}\text{C}$  Carbon footprint: An ideal tool to distinguish post-AGB and HaeBe stars*, 2013, ESO/VLT/SINFONI, ID: 091.D-0376, 4 hours
- **PI: Oksala**, *Searching for periodic spectral variability in the LBV MWC 314 and B supergiants sigma Cyg (HD 202850) and HD 164353*, 2013, DAO/1.2-m telescope, 6 nights
- PI: Oksala, *Searching for periodic spectral variability in the B[e] star HD 50138 and MWC 623 and the A supergiant HD 87737*, 2013, DAO/1.2-m telescope, 6 nights

- PI: Oksala, *Searching for periodic spectral variability in the B[e] star HD 50138 and the supergiants HD 12301 and HD 87737*, 2013, DAO/1.2-m telescope, 6 nights
- PI: Cidale, *Developing a near infrared diagnostic for magnetism in hot, massive stars*, 2013, Gemini/GNIRS, 1.9 hours
- PI: Borges Fernandes, *<sup>13</sup>Carbon footprint: An ideal tool to distinguish post-AGB and HaeBe stars*, 2013, 2013A002, SOAR/OSIRIS, 16 hours
- PI: Borges Fernandes, *Developing a near infrared diagnostic for magnetism in hot, massive stars*, 2013, 2013A001, SOAR/OSIRIS, 12 hours
- PI: Borges Fernandes, *Revealing the mass loss history of evolved massive stars*, 2013A003, 2013, SOAR/OSIRIS, 12 hours

## 2012 and earlier

- **PI: Oksala**, *Searching for periodic spectra variability in the B[e] star HD 50138 and the B supergiant HD 12301*, 2012, DAO/1.2-m telescope, 5 nights
- **PI: Oksala**, *Line profile variability in the spectrum of the B supergiant kappa Cas (HD 29025)*, 2012, DAO/1.2-m telescope. 4 nights
- **PI: Oksala**, *Searching for pulsational modes in the spectrum of sigma Cyg (HD 202850)*, 2012, DAO/1.2-m telescope. 9 nights
- PI: Borges Fernandes. *<sup>13</sup>Carbon footprint: An ideal tool to distinguish post-AGB and HaeBe stars*, 2012B623, SOAR/OSIRIS, 2012, 27.9 hours
- PI: Borges Fernandes, *Developing a near infrared diagnostic for magnetism in hot, massive stars*, 2012B621, SOAR/OSIRIS, 2012, 12 hours
- PI: Borges Fernandes, *Hot water in the disks of evolved massive stars*, 2012B622, SOAR/OSIRIS, 2012, 12 hours
- PI: Alecian, *Magnetism in Massive Stars: the MiMeS project*, ESO/HARPSpol, Large Program, ID:187.D-0917, 30 nights total (2011-2012)
- PI: Rivinius, *The most rapidly rotating magnetic non-degenerate stars and first candidate for interferometry of a magnetosphere*, ESO/FORS2 and ESO/UVES, ID: 284.D-5058, 2010, 2 hours DDT.
- PI: Neiner, *MiMeS: Magnetism in Massive Stars*, Bernard Lyot Telescope/Narval, 2010-2012, Large Program (LP) 130 hours
- PI: Neiner, *MiMeS: Magnetism in Massive Stars*, Bernard Lyot Telescope/Narval, 2010, 14 nights
- **PI: Oksala**, *Broadband Polarimetry of the magnetic B2Vp star sigma Ori E*, Mont Megantic/Belle et Bete polarimeter, 2009, 7 nights
- PI: Neiner, *MiMeS: Magnetism in Massive Stars*, Bernard Lyot Telescope/Narval, 2009, 11 nights
- **PI: Oksala**, *Probing the outer edge of the circumstellar disks of massive magnetic stars through higher-level Balmer lines*, 2008, DAO/1.8-m telescope, 7 nights
- **PI: Oksala**, *Probing the outer edge of the circumstellar disks of sigma Ori E through higher-level Balmer lines*, 2008, DAO/1.8-m telescope, 7 nights
- **PI: Oksala**, *Times Series Photometry of Massive Magnetic Stars*, CTIO/SMARTS 0.9-m telescope, 2007-2012, 96 total hours