

PROMOTION RECOMMENDATION  
The University of Michigan  
College of Literature, Science, and the Arts

Oleg Y. Gnedin, associate professor of astronomy, with tenure, College of Literature, Science, and the Arts, is recommended for promotion to professor of astronomy, with tenure, College of Literature, Science, and the Arts.

Academic Degrees:

Ph.D.	1998	Princeton University
B.S. & M.S.	1994	St. Petersburg State Technology University

Professional Record:

2011 – present	Associate Professor, University of Michigan
2006 – 2011	Assistant Professor, University of Michigan
2004 – 2006	Research Associate, Ohio State University
2001 – 2004	Institute Fellowship, Space Telescope Science Institute
1998 – 2001	Theory Post-doctoral Fellow, Institute for Astronomy, Cambridge

Summary of Evaluation:

Teaching – Professor Gnedin has been a strong contributor to teaching in the Department of Astronomy. He is noted for having been the instructor for an impressive array of courses at all levels. Professor Gnedin’s signature contribution was the development of a new course for undergraduate students with a focus on advanced computational techniques in astrophysics. This course brings our students to the forefront of computational methods, and this is having great impact on their future prospects for success within and beyond academia. Professor Gnedin has also has been a leader in the preparation of graduate students for their oral exam that is central to their admission to candidacy.

Research – Professor Gnedin is an astrophysical theorist who has made important contributions to our understanding of galaxy evolution. Through a deep understanding of the physics involved and careful attention to modeling on small scales, he is a leader in simulating and understanding galaxy formation. His newest research connects his detailed modeling of star cluster formation to the expected frequency of black hole binary gravitational wave sources, the formation of pulsars that may explain puzzling gamma ray observations of the Milky Way and the Andromeda Galaxy, and the production of hyper-velocity stars that are unbound from the galaxy. He has a strong track record of funding support with a high national and international profile that is evidenced by conference invitations and editorial work. Professor Gnedin’s high quality of scholarship is well valued in the Department of Astronomy.

Recent and Significant Publications:

“Formation of globular cluster systems: From dwarf galaxies to giants,” with N. Choksi and H. Li, *Monthly Notices of the Royal Astronomical Society*, 480, 2018, p. 2343.

“Modeling the formation of globular cluster systems in the Virgo cluster,” with H. Li, *Astrophysical Journal*, 796(10), 2014, 13 pages.

“Co-evolution of galactic nuclei and globular cluster systems,” with J. P. Ostriker, et al.,  
*Astrophysical Journal*, 785(71), 2014, 15 pages.

“Revisiting the first galaxies: The epoch of population III stars,” with A. L. Muratov, et al.,  
*Astrophysical Journal*, 773(19), 2013, 9 pages.

Service – Professor Gnedin has played an important role in terms of service within the Department of Astronomy. His most notable contribution is through chairing the graduate admission committee for three years. He has also served as a member and chair of the department’s Preliminary Examination Committee. In this role, he has fostered departmental efforts to aid graduate student preparation for the exam. In the larger field, Professor Gnedin also served on prize committees and performed national and international agency reviews as well as doing the normal sorts of reviewing for journals. He is currently an editor of a significant journal.

External Reviewers:

Reviewer (A)

“He stands out as a global leader at the intersection of cosmological simulations and gravitational dynamics.”

Reviewer (B)

“Oleg’s scientific spectrum of research is very broad, including neutron stars, super- massive black holes and active galactic nuclei, interstellar medium dynamics and star formation, star clusters, dwarf galaxies, disk galaxies and dark matter. However all of these different topics are nicely linked with the ultimate goal to develop a more detailed and self-consistent model of galaxy evolution over cosmic time.”

Reviewer (C)

“Overall, Gnedin is a highly regarded member of a broad research community that works on problems of galaxies and their star cluster components. Citations and invited talks indicate wide interest and influence of his work.”

Reviewer (D)

“Oleg has an impressive track record of scientific contributions, in a variety of areas in computational and theoretical astrophysics and observational astronomy.”

Reviewer (E)

“I am again struck by Gnedin’s ability to state a research problem cleanly, to convey its astrophysical importance, and at the same time not to gloss over its technical difficulties. The breadth of his current work is amply demonstrated in his papers over the past decade, including studies of the dynamical evolution of globular clusters, analysis of hypervelocity stars in the Galaxy, the structure of dark-matter halos, and (I would say most importantly) simulations of cluster formation in large galaxies.”

Reviewer (F)

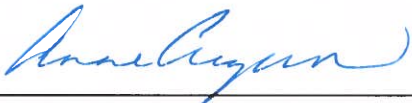
“Prof. Gnedin was among the first to tackle the evolution of globular cluster *systems* – rather than simply individual [sic] globulars – within the universal [sic] context over cosmic time (e.g. publication 41 and 56). His is now one of the leading groups of modelers that observers in this field compare their data to. This is because he has thought carefully about which simulations to run and how to present the results (e.g. publications 79, 85, 87) to be able to make a realistic comparison.”

Reviewer (G)

“In few words, Dr. Gnedin’s achievements, publication record, and standing in the field would certainly be considered sufficient for promotion to Professor with Tenure at my institution and at most universities in North America.”

Summary of Recommendation:

Professor Gnedin is a leading scientist in the field of galaxy formation and cosmology. He has compiled a record of insightful scholarship that is judged by his peers to have high quality, based on citations and numerous conference invitations. He is an admirable contributor to the educational mission of the Department of Astronomy. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Associate Professor Oleg Y. Gnedin be promoted to the rank of professor of astronomy, with tenure, College of Literature, Science, and the Arts.



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Anne Curzan, Dean

Geneva Smitherman Collegiate Professor of  
English Language and Literature, Linguistics  
and Education

Arthur F. Thurnau Professor

College of Literature, Science, and the Arts

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