

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

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

Academic Degrees:

Ph.D.	1999	Princeton University
M.A.	1995	Princeton University
B.S./M.S.	1994	St. Petersburg State Technical University

Professional Record:

2006 – present	Assistant Professor, Department of Astronomy, University of Michigan
2004 – 2006	Research Associate, Department of Astronomy, The Ohio State University
2001 – 2004	Institute Fellowship, Space Telescope Science Institute
1998 – 2001	Theory Postdoctoral Fellowship, Cambridge University

Summary of Evaluation:

Teaching – Professor Gnedin is an excellent instructor who takes teaching seriously. He has an engaging, interactive style in the classroom and he has brought novel topics to his students, such as a serious treatment of time travel, which were received with enthusiasm. He has taught at every level and is one of the few faculty members with the intellectual capacity and knowledge to teach nearly every course. He has been active in curriculum development and in the revision of our undergraduate courses and graduate curriculum. He has worked on research projects with several undergraduates, is on numerous Ph.D. committees, and is an effective mentor.

Research – Professor Gnedin is one of the most respected scientists in astrophysics. He is a highly regarded theorist and is sought after for talks at other universities and at major international meetings. The Universe evolved from an early smooth state to our current structure-rich state, containing galaxies, stars, and planets. Professor Gnedin is a leader in understanding the formation and evolution of these structures, which is of central importance in astrophysics. His theoretical work on the interaction between dark matter and normal matter is accepted as the standard in the field. Another of his modeling efforts has shown how the “missing dwarf galaxy problem,” a leading problem in the field, can be resolved.

Recent and Significant Publications:

“The mass profile of the galaxy to 80 kpc,” with W. R. Brown, et al., *The Astrophysical Journal*, 720, 2010, pp. L108-L112.

“Modeling the metallicity distribution of globular clusters,” with A. L. Muratov, *The Astrophysical Journal*, 718, 2010, p. 1266-1288.

“Dynamical evolution of globular clusters in hierarchical cosmology,” with J. L. Prieto, *The Astrophysical Journal*, 689, 2008, pp. 919-935.

“Dark matter halos of disk galaxies: Constraints from the Tully-Fisher relation,” with D. H. Weinberg, et al., *The Astrophysical Journal*, 671, 2007, pp. 1115-1117.

Service – Aside from some short-term assignments, Professor Gnedin has worked vigorously for several years on two committees: the Preliminary Examination Committee and the Graduate Recruitment Committee. His work on these committees has been excellent. He has sought ways to improve the process (graduate recruitment) or to improve performance (preliminary exam committee), such as by helping to produce a set of problems that all graduate students should be able to answer. He was recently appointed chair of the graduate recruitment effort.

External Reviews:

Reviewer (A)

“Oleg’s work focuses on galaxy formation, the most active central area of cosmology. His major contributions refer to star clusters, dwarf galaxies and dark-matter halos. ...his overall potential may be compared to successful researchers [of his generation] who are somewhat more advanced in their careers...”

Reviewer (B)

“Taken as a whole, Oleg’s contribution to studies of galaxy formation is significant and has led to advances in the subject. Oleg is bright, enterprising and productive. He is held in high international esteem, as evidenced, for example, by invitations to speak at major conferences. His publication and citation records are healthy for a theorist working in his field. He works in a major area of astrophysical research activity that has a great future...”

Reviewer (C)

“...Oleg is a theoretical astrophysicist who is already making considerable impact in the field and promises a good deal more. ...he would certainly qualify for tenure and promotion at his stage within my university... ...I would certainly list two of Oleg’s papers as must-reads for anyone: these are Muratov & Gnedin (2010) and Kravtsov & Gnedin (2005). I rate these as the first serious efforts to go beyond the simple semianalytic codes or even analytic arguments of globular cluster formation...”

Reviewer (D)

“...Dr. Gnedin has an unusually broad research portfolio, extending from cosmology, galaxy formation, and fundamental physics to the dynamical evolution of star clusters and even the physics of neutron stars and magnetars. ... Gnedin works in one of the most fashionable – and therefore competitive – areas of theoretical astrophysics, and only the best manage to establish a distinct research profile and international visibility for their work. Dr. Gnedin has clearly succeeded in attaining this level of recognition...”

Reviewer (E)

“Oleg is a very good scientist in the upper ranks of academic astronomers of his experience level... He has made significant contributions... His productivity is good and steady...”

Reviewer (F)

“...Oleg is a superb scientist with a solid knowledge of physics, strong scientific intuition, and enviable skills in both analytic calculations and numerical techniques. The range of his scientific interests and accomplishments is quite impressive. ... Oleg is extremely interactive and is always a strong presence at talks, seminars, and scientific discussions.”

Reviewer (G)

“Based on Oleg’s past research record and his potential for future growth, I support this promotion. ... His research talks that I have attended were always well presented and rich in information content. His deep interest and knowledge in different areas of astrophysics were clearly reflected in his talks and during the question-answer period.”

Reviewer (H)

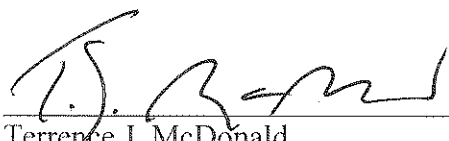
“Professor Gnedin is a highly respected theoretical astrophysicist, whose work has already had major impact in the field. I fully expect him to continue producing cutting edge science for decades to come... ... I have seen Dr. Gnedin give many professional talks and I always found them extremely clear, stimulating, and engaging. ... Professor Gnedin’s work is held in high esteem in the field. His work is frequently cited... Some of his papers are already considered classics.”

Reviewer (I)

“Oleg has an unusually diverse set of research accomplishments for a scientist at his stage of career, and he has established a strong position at the intersections of stellar dynamics and galaxy formation theory. ...I think that promotion and tenure are well justified...”

Summary of Recommendation:

Professor Gnedin is an excellent scholar who is committed to education and to the intellectual atmosphere at Michigan. His efforts have benefitted undergraduates, graduate students, and fellow faculty. The Executive Committee of the College of Literature, Science, and the Arts and I recommend that Assistant Professor Oleg Y. Gnedin be promoted to the rank of associate professor of astronomy, with tenure, College of Literature, Science, and the Arts.



Terrence J. McDonald
Arthur F. Thurnau Professor,
Professor of History and Dean
College of Literature, Science, and the Arts

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