Current and Pending Support, David C. Collins

Current Funding

Project Title: Magnetic Fields in the Formation of Molecular Clouds, Filaments, and Cores
Project PI: D. C. Collins
Program Name and award number: NSF AAG AST-1616026
Period of Performance: 09/01/2016 - 08/31/2020
Amout $298,492
FTE: 1.0 Month/year
Summary of Work: This project is studying the gravitational collapse of molecular clouds using simulations of magnetohydrodynamical turbulence.

Project Title: Modeling CMB polarization foregrounds and their isotropy violation
Project PI: K. Huffenberger
Program Name and award number: NASA ATP NNX17AF87G
Period of Performance: 01/08/2017 - 02/02/2021
Amount $428,043.00
FTE: 1.0 Months/Year
Summary of Work: In this project, we are modeling the CMB foregrounds using a number of techniques, including an analytic filament model and simulations. The proposed work continues and extends the researching ongoing in this project.

Project Title: Signatures of Type Ia Supernovae Explosions and their Cosmological Implications
Project PI: P. Hoeflich
Program Name and award number: NSF AAG AST-1715133
Period of Performance: 10/01/2017 - 09/31/2021
Amount $460,498.00
FTE: 0.0 Months/Year
Summary of Work: In this project, we examine the role of magnetic fields in Type Ia supernovae. There is a synergistic overlap with the proposed work in the shared use of high performance computing software and resources.

Pending
Project Title: CMB Polarization Foreground Effects on B-modes and Lensing
Project PI: K. Huffenberger
Program Name: NSF AAG
Period of Performance: 08/01/2020 - 07/31/2023
Amount $533,714
FTE: 1 Month/Year
Summary of Work: This work will develop analytic and numerical models of the microwave ISM. We will use these tools to understand the contamination by the local ISM to lensing and CMB observations.