

# Towards a Galactic Science Driver

## CONTENTS

- I. What Is a Galactic Science Driver? 26**
  - So Why the Galaxy? 27
  - Response of Stellar Systems to Changing Galactic Environments 27
    - Climate and Weather* 28
    - Evolution of Living Matter On Earth* 29
    - Geophysical Activity* 30
  - Global Galactic Structure, Dynamics, and Singularities 31
    - So-Called 'Dark Matter'* 31
    - M-Sigma Relation* 31
    - A Physical Singularity?* 31
    - Active Galactic Nuclei* 31
  - In Search of Principle 32
- II. Categories of Causality 33**
  - Climate as a Case Study 34
- III. Solar System Weather Changes Challenge Conventional Theories 35**
  - Changing Martian Climate 35
  - Stormy Planets 35
  - The Forgotten Ice Giants 38
  - Interplanetary Comparative Cosmoclimateology 39
- IV. Earth-Moon Comparative Planetology 40**
  - Biodiversity, Geophysical, and Galactic Cycles 41
  - A Cusian Approach 42
- V. A Vernadskian Reconsideration of Galactic Cycles and Evolution 44**
  - Identifying the Important Evidence 45
  - Vernadsky's 'Study of Life and the New Physics' 46
  - Cosmic Dissymmetry 47
  - Space-Time of Anti-Entropy 48
- VI. Singularities and Supermassive Black Holes 50**
  - A Singularity 50
  - Unified Structure 51
  - Energy Flux Density 52
  - A Hypothesis 53