



Also by Roger Ellman:

---

*\* THE ORIGIN AND ITS MEANING*

*ON THE ORIGIN OF THE UNIVERSE AND ITS MECHANICS,  
THE MECHANISM AND ORIGIN OF INTELLIGENCE,  
AND THE IMPLICATIONS FOR THE INDIVIDUAL AND SOCIETY*

---

*\* ON THE NATURE OF MATTER*

*THE ORIGIN OF THE UNIVERSE CREATED MATTER  
FUNDAMENTALLY WAVE IN NATURE, NOT PARTICULATE*

---

*\* THE PHILOSOPHIC PRINCIPLES OF RATIONAL BEING*

*ANALYSIS AND UNDERSTANDING OF  
REALITY, TRUTH, GOODNESS, JUSTICE, VIRTUE, BEAUTY,  
HAPPINESS, LOVE, HUMAN NATURE, SOCIETY, GOVERNMENT,  
EDUCATION, DETERMINISM,  
FREE WILL, AND DEATH*

---

*\* GRAVITICS*

*THE PHYSICS OF THE BEHAVIOR AND CONTROL OF GRAVITATION*

---

*\* THE TROUBLE WITH THE HUBBLE LAW*

*AN ALTERNATIVE TREATMENT OF REDSHIFTS IS EVIDENCED BY  
FOUR INDEPENDENT OBSERVED COSMOLOGICAL EFFECTS.*

*\* RESOLUTION OF THE "SPOOKY" PROBLEMS  
OF QUANTUM MECHANICS*

*THE WAVE NATURE OF PARTICLES AND LIGHT RESOLVES  
EINSTEIN'S "SPOOKY" ENTANGLEMENT PROBLEM AND THE  
"WEIRDNESS" OF QUANTUM MECHANICS*

---

---



$$a_{\text{Grav}} = G \cdot M / d^2$$

# ***HOW TO TRAVEL TO AND EXPLORE MARS OR PROXIMA CENTAURI - B***

Use of fuel is impractical for space exploration. The only fuel-free acceleration for space exploration is by controlled gravitation, and that is the only means for a flying vehicle to explore a distant planet and the only means of travel to it.

Such control of gravitation is the subject and purpose of this book.

Just as the sail-driven ships of past centuries explored the world with fuel-free travel by controlled use of the wind; a new gravitation technology will enable fuel-free exploration of space by control of the ubiquitous gravitational field.

***ROGER ELLMAN***

Cataloging Data

Ellman, Roger (1932- )

*How To Travel To and Explore Mars or Proxima Centauri b*

The physics and cosmological problems and their solution.

HOW TO TRAVEL TO AND EXPLORE MARS OR PROXIMA CENTAURI b

Copyright (c) Roger Ellman 2019

All rights reserved. This book may not be reproduced nor transmitted in any form nor by any means, electronic, mechanical or other including but not limited to photocopying, recording or by any information storage or retrieval system without written permission from the author, except for the inclusion of brief quotations in a review.

Library of Congress Control Number:2019911434

Published by: The-Origin Foundation, Inc.,  
1401 Fountaingrove Pkwy.  
Santa Rosa, CA 95403, USA  
707-537-0257

<http://www.The-Origin.org>

ISBN: 9781088501719





## CONTENTS

Notes re Author.....	iii
Preface .....	v
<u>The Problem</u>	
1. Space Exploration Requires Control of Gravitation .....	1
<u>The Nature of Gravitation</u>	
2. The Origin of Matter Is the Origin of Gravitation.....	4
3. From the Origin to the Complex Universe .....	15
4. The Mutually Communicating Outward Flow from all Particles .....	23
5. The Mechanism of Gravitation .....	31
<u>Control of Gravitation</u>	
6. Natural Deflection of Light.....	39
7. Analysis of the Amount of Deflection .....	47
8. Gravitation Deflector Mathematical Analysis Details .....	55
9. Anti-Gravitational Acceleration .....	63
10. Gravitation Deflector Engineering Design .....	69
11. Applications to the Problems of Space Travel .....	77
<u>Appendices</u>	
Appendix A – Why No Immediate Mutual Annihilation.....	85
Appendix A-1 – The Neutron .....	95
Appendix B – The Limitation of the Original Envelopes .....	107
Appendix C – Relative Propagated Outward Flow Concentrations Earth Surface Objects vs. Earth Gravitational Field .....	111
Appendix D – Factors Affecting Cubic Crystal Tilt .....	123
Appendix E - Index of Refraction of Propagated Outward Flow vs. that of Light .....	133





## ABOUT THE AUTHOR

The-Origin Foundation, Inc. is a non-profit organization founded to foster independent scientific, mathematical, and philosophical research.

The author of the present work, Roger Ellman is the General Director of the foundation.

Roger Ellman has published over fifty professional papers on topics ranging from physics, cosmology, and astrophysics to artificial intelligence and mathematics.

He has presented some of his papers to conferences of / at:

The American Physical Society [APS], .  
The American Society for the Advancement of Science,  
Cambridge University, United Kingdom  
The Library of Alexandria, Egypt  
The Russian Academy of Natural Sciences, St Petersburg  
The Hungarian Academy of Sciences, Budapest  
A Science Conference in Shang Hai, China

He is author of six books in addition to the present “How to Travel to and Explore Mars or Alpha Centauri”.

His education includes graduate studies at Stanford University after graduating from West Point, the United States Military Academy.



## PREFACE

The problem of space exploration is the immense distances, so immense that they are measured in the distance that light travels at its great speed for a year, the light-year. Neglecting our “near” moon, whether our space exploration is of Mars or of Alpha Centauri’s planet Proxima Centauri b [after Mars the next nearest human habitable planet] the round trip will take at least a year [Mars] or over 10 years [Proxima Centauri b].

That means that the vehicle must support the crew with food, water, elimination of waste, breathable air, medical services, electric power, *etc.* without any support from Earth for a year or more, which means that the vehicle must be massive, and that is just to get there and return home.

The purpose in traveling to Mars or Proxima Centauri b is to explore and scientifically investigate and that requires, in addition to simply getting there, a significant amount of scientific and laboratory equipment. Not only that, a flying vehicle to travel all over the destination planet is essential, which means that the space ship vehicle carrying all of that must be even more massive.

That massive vehicle ship must be accelerated and decelerated throughout the trip without use of fuel. Rockets consume far too much fuel for long distance or long term use and solar sails are far too inflexible and inefficient. The only fuel-free acceleration for space exploration is by controlled gravitation; and that is the only means of a flying vehicle to explore all over the destination planet.

Such control of gravitation is the subject and purpose of this book.

Just as the sail-driven ships of past centuries  
explored the world with fuel-free travel  
by controlled use of the wind;  
a new gravitation technology  
enables fuel-free exploration of space  
by control of the ubiquitous gravitational field.