

1. Record Nr.	UNISA996418437703316
Titolo	Dynamics of the sun and stars : honoring the life and work of Michael J. Thompson // Mario J. P. F. G. Monteiro [and three others], editors
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2020] Â©2020
ISBN	3-030-55336-1
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XIV, 343 p. 110 illus., 23 illus. in color.)
Collana	Astrophysics and space science proceedings ; ; Volume 57
Disciplina	523.7
Soggetti	Helioseismology Astroseismology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I: The Life and Work of Michael J. Thompson -- Michael Thompson's Legacy in Solar and Stellar Physics -- Michael Thompson in Sheffield -- Michael J. Thompson: A Remarkable Scientist, Leader, and Friend -- Michael -- Assessing the Threat of Major Outbreaks of Vector-Borne Diseases Under a Changing Climate -- Touching the Interior Structure and Dynamics of Our Nearest Star -- Part II: Solar Interior and Dynamics -- Uncovering the Hidden Layers of the Sun -- Solar Rotation -- On Solar and Solar-Like Stars Convection, Rotation and Magnetism -- Recent Progress in Local Helioseismology -- Time-Distance Helioseismology of Deep Meridional Circulation -- Surface Rotation and Magnetic Activity of Solar-Like Stars: Impact on Seismic Detections -- Study of Acoustic Halos in NOAA Active Region 12683 -- Helioseismic Center-to-Limb Effect and Measured Travel-Time Asymmetries Around Sunspots -- Probing the Variation with Depth of the Solar Meridional Circulation Using Legendre Function Decomposition -- New Inversion Scheme for Time-Distance Helioseismology -- On Active Region Emergence Precursors -- Solar Hemispheric Helicity Rules: A New Explanation -- Comparing Solar Activity Minima Using Acoustic Oscillation Frequencies -- Solar Cycle Variation of Large Scale Plasma Flows -- Measuring the Dispersion Relation of Acoustic-Gravity Waves in the Solar Atmosphere -- Non-adiabatic Helioseismology via 3D Convection Simulations -- Part III: From the Sun to the Stars --

Deciphering Solar Convection -- G Modes and the Solar Core -- Inverse Analysis of Asteroseismic Data: A Review -- Diagnostics from Solar and Stellar Glitches -- Dynamo States with Strikingly Different Symmetries Coexisting in Global Solar Simulations -- Influence of Turbulence on an Essentially Nonlinear Dynamo Mechanism -- Part IV: Stellar Dynamics -- The Tachocline Revisited -- Seismic Signatures of Solar and Stellar Magnetic Activity -- Confinement of Magnetic Fields Below the Solar Convection Zone -- Asteroseismic Study of KIC 11145123: Its Structure and Rotation -- The Impact of a Fossil Magnetic Field on Dipolar Mixed-Mode Frequencies in Sub- and Red-Giant Stars -- Asteroseismic Stellar Modelling: Systematics from the Treatment of the Initial Helium Abundance -- Direct Travel Time of X-ray Class Solar Storms -- On the Limits of Seismic Inversions for Radial Differential Rotation of Solar-Type Stars -- The Physical Origin of the Luminosity Maximum of the RGB-Bump -- A New Utility to Study Strong Chemical Gradients in Stellar Interiors -- 16 Cygni A: A Testbed for Stellar Core Physics -- Exploring the Origins of Intense Magnetism in Early M-Dwarf Stars -- Part V: The Future -- A Future Path for Solar Synoptic Ground-Based Observations -- Observational Asteroseismology of Solar-Like Oscillators in the 2020s and Beyond -- Oblique Pulsation: New, Challenging Observations with TESS Data -- Accounting for Asphericity -- A Comparison of Global Helioseismic-Instrument Performances: Solar-SONG, GOLF and VIRGO -- Open Discussion -- Contemplating the Future.

Sommario/riassunto

These are the proceedings of a meeting celebrating Michael Thompson's seminal work on solar and stellar physics, as well as his major contributions to the development of the National Center for Atmospheric Research. The meeting also marked Michael J. Thompson's untimely death in October 2018. Michael played a key role in the development of helioseismology and its application to the study of the structure and dynamics of the solar interior, and he provided a strong foundation for the extension of seismic studies for other stars. After focusing for several years on more administrative activities, he was returning to leading the seismic studies of solar interior rotation and he was deeply involved in the understanding of the dynamics of the core of stars, when his life was tragically lost. The conference focused on dynamical aspects of the sun and stars, based on the large amount of data available on solar and stellar oscillations, and the extensive and detailed modelling now becoming feasible. Combining observations, seismic analysis, and modelling the meeting and this book serve as a fitting memorial to a close colleague and friend, much missed.
