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Titolo	Cartography of the Sun and the Stars [[electronic resource] /] / edited by Jean-Pierre Rozelot, Coralie Neiner
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Collana	Lecture Notes in Physics, , 0075-8450 ; ; 914
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Nota di contenuto	Preface -- Reconstructing images in astrophysics, an inverse problem point of view -- Reconstruction of the solar subsurface through helioseismology with SDO -- Imaging surface spots from space-borne photometry -- Reconstruction of Thermal and Magnetic Field Structure of the Solar Subsurface through Helioseismology -- Physical processes leading to surface inhomogeneities: the case of rotation -- Interferometry to determine stellar shapes: application to Achernar -- Interferometry to image surface spots -- Interferometric Surface Mapping of RapidlyRotating Stars. - Application to the Be star Achernar -- Doppler and Zeeman Doppler Imaging of Stars.
Sommario/riassunto	The mapping of the surface of stars requires diverse skills, analysis techniques and advanced modeling, i.e. the collaboration of scientists in various specialties. This volume gives insights into new techniques allowing for the first time to obtain resolved images of stars. It takes stock of what has been achieved so far in Chile, on the ESO VLTI instrument or, in the States, on the CHARA instrument. In recent times interferometry, combined with adaptive optics has allowed to reconstruct images of stars. Besides the Sun (of course) by now five

stars have been resolved in detail. In addition to interferometry, this book highlights techniques used for mapping the surfaces of stars using photometry made by space observatories; Zeeman- and Doppler Imaging; mapping the surface element abundances via spectroscopy. This book will also take stock of the best images of the solar surface, made by connecting the differential rotation to the underlying physical parameters derived from helioseismology. Recent measurements of flattening of the solar surface by SDO showed that the Sun’s shape is linked to the rotation of the core. It is shown how such a result is generalizable to the stars.