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Nota di contenuto	The impact of gravitating lensing on astrophysics -- to basic concepts of gravitational lensing -- Optical observations of gravitational lenses -- Recent radio observations of gravitational lenses -- Old faithful: The venerable gravitational lens system 0957+561 -- Determining the Hubble parameter -- Time delay determination for the first gravitational lens Q0957+561 A,B -- Photometric monitoring of gravitational lenses with the nordic optical telescope -- A search for closely-spaced gravitational lenses -- A high-resolution imaging

survey for gravitational lenses -- Search for gravitational lensing in a sample of highly luminous quasars -- Bidimensional spectrography of multiple quasars -- Sizing up the universe with an optical illusion: Comments on the measurement of ?t in Q 0957+561 -- HST observations of G2237+0305 and PG1115+080 -- A star-formation region in 2237+030 -- Redshift measurements of the brightest cluster galaxies of the gravitational lens 0957+561 -- The Triple Quasar PG1115+080 -- 1830-211 as a lens artefact -- 0218+357: The smallest separation lensed system -- Gravitational microlensing -- The search for massive compact halo objects -- Probing the galactic disk with gravitational microlensing -- Searching for microlensing in optical lightcurves of quasars -- The Hamburg quasar monitoring program at Calar Alto -- Microlensing predictions for the Einstein cross 2237+0305 -- Expected color variations of the microlensed QSO 2237+0305 -- Intrinsic variability implications for microlensing -- Gravitational lensing statistics -- Quasar-galaxy associations -- Associations between QSOs and galaxies -- Quasar-galaxy associations -- Einstein rings and related phenomena -- Observational indications for statistical lensing by clusters of galaxies -- Counts of galaxies around distant highly luminous QSOs -- A search for close separation (? 1?) quasar images -- Joint discussion on quasar-galaxy associations -- Luminous arcs: An observational update -- Cluster gravitational lenses -- Deep galaxy surveys -- Statistical lensing by clusters of galaxies and Dark Matter distribution -- Observation and analysis of Abell 2218 arcs and rings -- New results on Abell 963 and MG1131+0456 -- On the straight arc in A2390 -- A search for gravitational lenses using sky survey plate scans -- Gravitational lensing of BL Lac objects and related AGN -- Recent observations of PKS1830-211 -- Possible test for ? with gravitational lenses -- Gravitational lensing by large-scale structures -- Concluding summary -- Spectrography in the 0957+561 field -- Gravitational lensing in alternative cosmological models -- Possibilities for observing lensing effects in the gravitational field of our galaxy -- The appearance of cross-like quasar images and the estimation of GL parameters -- Gravitational lensing properties of the Reissner-Nordström type neutron star -- A search for the optical counterpart of the Einstein ring PKS 1830-211 -- Local behavior of caustics in different lens models -- Multiple imaging by gravitational waves -- Statistical lensing by extended lenses -- VLBI hybrid maps of 0957+561 A,B -- Deformation of P Cygni line profiles by gravitational microlensing effects -- Statistical lensing and the overdensity of QSO near foreground galaxies -- A moving gravitational lens in the Friedmann universe -- Strong microlensing and BL LAC objects -- Dispersive effects in the spectra of QSO pairs -- Our galactic nucleus through the lens's eye of gravity -- Unobserved lensing agents -- Discordant redshifts in compact groups of galaxies -- An analytical approach to quasar variability due to microlensing -- Morse theory and gravitational microlensing -- N-body techniques for ?-lensing -- Statistics of lensing by clusters of galaxies: Giant luminous arcs -- Spherical opaque gravitational lens models and their implication for ? 0 -- Catastrophe theory and stable images and caustics in gravitational lenses -- List of contributions not submitted for inclusion.

Sommario/riassunto

One of the most spectacular predictions of Einstein's theory of general relativity is the occurrence of gravitational lenses in our galactic system.Nowadays the mastering of the mathematics together with the technology available to astronomers allow Einstein's prediction to be confirmed. Several reviews here give the reader the chance to under-stand the basic theoretical concept of gravitational lensing and to

obtain an overview of observational work. The present state of the field and latest results are given in a large number of specialized papers. Anextensive source and subject index make these proceedings valuable also as areference book for all researchers active in the field.