

## Index

### Symbols Index

- $\alpha$  Aquilae 233
- $\alpha$  Cygni stars 51, 70, 123, 253, 258, 259, 261
  - $\alpha$  Cyg 258, 259
  - $\beta$  Ori 259
    - light curve 253, 254
    - radial velocity curve 253, 254
  - amplitudes 254
  - Deneb 258, 259
  - driving mechanism 258
  - evolution 259
  - HD 100262 259
  - HD 168607 259
  - HD 62150 259
  - HD 91619 259
  - HR 4338 259
  - HR 8020 259
  - instability strip 258, 259, 261
  - periods 254, 258, 259
  - pulsation modes 254, 258
  - Rigel 117, 258, 259
    - light curve 253, 254
    - radial velocity curve 253, 254
  - strange modes
    - RSG connection 259, 261
- $\alpha$  Herculis 4
- $\alpha$  Orionis 4
  - distance 231
  - starspots 231
- $\alpha$  Virginis 38
- $\alpha$ -capture elements 57
- $\alpha^2$  Canum Venaticorum stars *see* Ap stars
- roAp stars 242
- $\beta$  Canis Majoris 248
- $\beta$  Cephei 248
  - Be companion 249
  - radius 249
  - ring structure 249
- $\beta$  Cephei stars 51, 52, 122, 127, 240, 245–251, 265
  - $\beta$  CMa 248
  - $\beta$  Cep 248
    - Be companion 249
    - radius 249
    - ring structure 249
  - $\zeta$  Oph stars 246
  - amplitudes 246
  - Be stars 246
  - catalogue 249
  - driving mechanism 249, 251
    - missing opacity 250
  - HD 180642 245
  - instability strip 249, 250
  - light curves 245, 246
  - Magellanic Clouds 251
  - magnetic fields 249
  - masses 249, 251
  - mode identification 245
  - multi-periodic nature 249
  - nonlinear effects 245
  - non-radial oscillations 249
  - oblique pulsator model 249
  - periods 246, 249
  - period–gravity relation 240
  - period–radius relation 240
  - pulsation modes 246, 249
  - solar-like oscillations
    - stochastic driving 246
  - spectral types 249
  - spectral variability curves 245, 247
  - spectroscopy 248
  - V1449 Aql 245
- $\beta$  Lyrae stars 3, 4, 32, 35
  - $\beta$  Lyr 3, 4
  - spotted 36

- $\beta$  Orionis 117, 254, 258, 259
  - light curve 253
  - radial velocity curve 253, 254
- $\beta$  Persei 3, 4, 7
- $\gamma$  Cassiopeiae 43
- $\gamma$  Doradus stars 51, 52, 124, 136, 233, 236, 240–244, 249
  - amplitudes 234, 240
  - Blazhko effect 241
  - classification 241
  - driving mechanism 242
  - instability strip 241, 243
    - edges 241
  - KIC 11285625 236
  - light curves
    - KIC 11285625 236
  - luminosity classes 240
  - masses 240
  - periods 234, 240
  - pre-MS 240
  - pulsation modes 234, 240
  - rotation 240
  - spectral types 240
  - temperatures 240
- $\gamma$  mechanism 50, 113, 119, 168, 183, 199, 218, 242, 244
  - partial ionization regions 119, 120
- $\gamma$  modes 140
- $\Delta S$  162
  - calibrations 162
- $\delta$  Cephei *see* Cepheids
- $\delta$  Delphini 233
- $\delta$  Scuti stars 23, 51, 52, 77, 116, 120, 121, 127, 136, 233, 236, 237, 239–242, 244, 248, 249, 265
  - $\alpha$  Aql 233
  - $\delta$  Del 233
  - $\epsilon$  mechanism 116
  - $\rho$  Pup 233
  - Altair 233
  - amplitudes 234
  - asteroseismology
    - challenges 240
  - Blazhko effect 240
  - catalog 234
  - driving mechanism 242
  - evolution 236
  - HADS
    - amplitudes 235
    - evolution 236
    - LMC 238
    - nonlinear effects 235
  - instability strip 233, 238, 241, 243
    - edges 241
    - HADS position 236
  - KIC 9700322 234
  - LADS
    - amplitudes 235
  - light curves
    - KIC 9700322 234
  - luminosities 234
  - metallicity 234
  - mode identification 238
  - nonmagnetic Am stars 233
  - periods 234
  - period–gravity relation 240
  - period–luminosity relation 237
    - theoretical 239
  - period–radius relation 240
  - Population I 233
  - pre-MS 236, 238
  - pulsation modes 234, 242
  - rotation velocities 234
  - small Cepheids 240
  - solar-like pulsation 126
  - spectral types 233
  - temperatures 233
- $\delta$  mechanism 282
- $\ell$  Carinae 74
- $\epsilon$  Aurigae 4
  - $\epsilon$  mechanism 104, 113–117, 258, 282, 283
    - $\alpha$  Cygni stars 117
    - $\delta$  Scuti stars 116
    - growth rate 116
    - GW Vir stars 116
    - He WD merger 116
    - Population III stars 116
    - post-He flash 116
    - stellar disruption 115, 116
    - upper stellar mass limit 115, 116
- $\zeta$  Ophiuchi stars 246
  - $\zeta$  Oph 246
  - $\eta$  Centauri 246
- $\eta$  Antinoi 4
- $\eta$  Aquilae 3, 4, 9, 184, 195
- $\eta$  Boötis 125
- $\eta$  Carinae 4, 41, 260
- $\eta$  Centauri 246
- $\iota$  Boötis 4
- $\iota$  Canis Majoris 254
- $\kappa$  mechanism 50, 51, 113, 119, 168, 183, 199, 218, 219, 242, 244
  - He II ionization 119
  - partial ionization regions 119, 120
- $\lambda$  Boötis 233
- $\lambda$  Eridani stars 43, 247
  - light curves 247
  - periods 247

- rotation 247
- $\mu$  Cephei 4
- $\pi$  modes 140, 143
- $\xi$  Hydrae variables 125, 218
  - $\xi$  Hydrae 218
- o* Ceti *see* Mira variables
- $\rho$  Puppis 233
- $\chi$  Cygni 3, 4, 219, 223, 225
- $\omega$  Centauri 157, 173, 180, 269, 270, 273
- $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$  reaction 283
- 16 Cygni A 148
- 1SWASP J024743.37-251549.2B 277, 298, 299
- 20 Tauri 248
- 2MASS 16, 168, 221, 222, 235
  - photometric system 16
- 2MASS 06451725+4122158 235
- 2MASS J14074792-3945427 33
- 33 Librae 244
- 3D simulations 125, 154
- 420 Mayer Leonis 6
- 53 Persei stars 245, 251
  - 53 Per
    - pulsation modes 251
  - SPB stars 251
- 68 (Bode) Leonis 6

## Subject Index

### a

- a Centauri 35
- AAVSO 21, 22, 178, 213, 216, 219, 228, 230, 231
  - 100th anniversary 22
  - VSX index 22
  - website 22
- acoustic cutoff frequency 136
- acoustic frequency 134
- active galactic nuclei 30
- adiabatic approximation 55, 87, 90, 95
  - justification 88, 90
  - limitations 90, 105
- adiabatic exponents 81, 88
  - first 88, 89
  - ideal gas 100
  - third 80, 89
- AGB 29, 58, 60, 64–66, 69, 167, 206, 207, 211, 212, 215, 219, 220, 226, 227, 268
  - early 65, 69
  - Mira variables
    - shell flashes 228
    - mass loss 220
  - Miras 227
  - post 43, 58, 66, 69, 211, 212, 214, 268, 285
  - super 69
  - thermally pulsing 65, 69
- AHB stars 200
- AI Velorum stars 233, 235
- Algol stars 3–5, 7–10, 24, 30, 35, 36
  - $\beta$  Persei 3, 4, 30
    - triple system 32
  - $\epsilon$  Aurigae 4
  - Egyptians 3
  - etymology 3
  - spotted 36
- All Sky Automated Survey 25, 249
- Altair 233
  - fast rotation 240
- AM Canum Venaticorum stars 45
  - SNe Ia progenitors 45
- AM Herculis stars 45
- AM stars
  - variability 234
- Andromeda Galaxy 197, 198
  - RR Lyrae 181
    - globular clusters 181
- Anomalous Cepheids *see* Cepheids
- Antinous 4
- Ap stars 34–36
  - $\alpha^2$  CVn 35
  - noAp stars *see* noAp stars
  - roAp stars *see* roAp stars
- Aquila 7, 21
- Arequipa, Peru 184
- Argelander, F. W. A. 5, 21
- AS Cancri 114
- asteroids 30
- asteroseismology 11, 13, 28, 67, 131, 150, 152, 156, 240, 244, 268, 300
  - $\gamma$  Dor stars 240
    - challenges 241
  - accuracy vs. precision 152
  - DBV stars
    - KIC 8626021 290
  - GW Vir stars
    - GW Vir 286
  - neutron stars
    - gravitational waves 303
  - nonlinear 156
  - red giants
    - fast-rotating cores 138
  - sdB stars
    - formation channels 268
    - internal rotation 268
  - SPB stars
    - challenges 245, 252
  - stellar populations studies 152
  - ultra-compact objects

- asteroseismology (*contd.*)
  - gravitational waves 304
  - white dwarfs 275, 291
  - crystallization 282, 295
  - evolution 275
  - fundamental physics 282, 290
- asymptotic giant branch (*see* AGB)
- AT Andromedae 15
- avoided crossings 139, 141
  - KIC 6442183 140, 143
- b**
- Baade, Walter 197, 208
- Baade–Becker–Wesselink method 187
- Baade–Wesselink method 166, 187
- Bailey diagram 158, 159, 174, 176
  - IR 160
  - theoretical 155
- Bailey, Solon I. 22, 157
- Balloon 090100001 265
- bandpasses 16
- Barnes–Evans method 225
- Barycentric Julian Date 13
- Bayer, Johann 1, 2, 5–7
- BD+13°3224 256
- Be stars 43, 247
  - $\gamma$  Cassiopeiae 43
  - $\lambda$  Eridani stars 43, 246, 247
  - decretion disks 43
  - KIC 6954726 44
  - mass loss 43
  - outbursts 43
  - pulsations 44
    - $\beta$  Cep 246
    - $\zeta$  Oph 246
    - SPB 246
  - rapid rotation 43
  - solar-like pulsation 126
- Be/X-ray binaries 47
- BEP stars 299
- Bessel equation 95
- Betelgeuse *see*  $\alpha$  Orionis
- Betsy stars *see* PG 1716+426 stars
- BH Crucis 229
- BL Boötis stars *see* anomalous Cepheids
- BL Herculis stars 201, 203, 204, 207, 209
  - BL Her 199, 200, 203
    - metallicity 204
  - bump 155
  - evolution 206, 207
  - instability strip 206
  - $O$  –  $C$  diagram 207
  - period changes 207
  - period doubling 155, 202
    - periods 199
- black holes 47, 49, 70, 275, 302, 304
  - accreting 47
  - pulsating 275, 302
  - pulsations
    - driving mechanisms 302
- Blaeu, Willem 4
- Blazhko effect 155, 160, 168–172, 179
  - $\delta$  Sct stars 240
  - $\gamma$  Dor stars 241
  - Cepheids 189
  - explanation 171
  - long-term cycles 171
  - RR Gem 171
  - RR Lyr 171
  - V445 Lyr 171
  - XZ Cyg 178
- Blazhko, Sergei 160, 169
- blink comparator 23
- blue loop 67, 194, 195, 206, 207, 212, 255
- blue stragglers 35, 236
  - Algol connection 35
  - anomalous Cepheids progenitors 211
  - FK Com connection 38
  - W UMa connection 38
- blue subdwarfs 116, 275
- blue supergiant pulsators 253
  - mass loss-pulsation connection 253
- Boltzmann equation 57, 79
- Bonn observatory 5
- boundary conditions 92, 94
  - center 92, 93, 95
    - rigid sphere 95
  - surface 93, 94
- BPM 37093 294
- Brahe, Tycho 1
- British Astronomical Association 21
- Brunt–Väisälä frequency 134, 137, 138, 255
- Bullialdus, Ismael 1, 8
- Bump Cepheids 154
- buoyancy 132
  - frequency 134
- BX Cir *see* PV Telescopii stars
- BX Circini stars 256
- BY Draconis stars 37, 39
  - BY Dra 37
  - marginal 37
  - Proxima Centauri 37
  - V645 Centauri 37
- c**
- C-burning 69, 70
- C-D diagram 148
- Caelum 7

- Caesar, Gaius Julius 11
- Canada-France-Hawaii Telescope 265
- cataclysmic variables 44
  - classification 45
  - dwarf novae 45
    - accretion disk 45
    - bright spot 46
    - outburst scenarios 45
    - SU UMa stars 45
    - U Gem stars 45
    - Z Cam stars 45
  - magnetic 45
    - AM CVn stars 45
    - AM Her stars 45
    - DQ Her stars 45
    - intermediate polars 45
    - polars 45
  - matter accretion 46
  - novalike 46
    - DW UMa 46
    - RW Tri stars 46
    - SW Sex stars 46
    - UX UMa stars 46
    - VY Scl stars 46
  - period gap 45, 47
  - SU Ursae Majoris stars
    - superhumps 45
  - SW Sex stars 46, 47
    - superoutbursts 45
  - V455 And
    - pulsations 300
- Catalina Real-time Transient Survey 26, 168, 176
- catalogues
  - $\beta$  Cephei stars 249
  - $\delta$  Scuti stars 234
  - AAVSO 178, 213, 216, 219, 230, 231
  - Clement 172, 197, 200, 217
  - EC 14026 stars 269
  - GCVS 4, 7, 24, 29, 32, 33, 41–44, 77, 185, 199, 209, 216, 233, 245, 246, 251, 253, 256, 269, 270, 279
  - Haro & Luyten (1962) 278
  - OGLE 217
  - Sawyer-Hogg 172
  - VSX 22, 32, 245, 246, 251, 253, 256
- CC Lyrae 204
- Centaurus 7
- Cepheids 3, 8–10, 51, 52, 70, 71, 73, 77, 99, 114, 115, 120, 121, 125, 153, 154, 168, 183–185, 187–211, 217, 239
  - $\delta$  Cephei 3, 4, 8, 10, 21, 74, 183–185, 195
    - angular diameter 74
    - distance 74
    - mass 77
    - mean density 77
    - radius 74
    - trigonometric parallax 74
  - $\ell$  Carinae 74
  - $\eta$  Aquilae 4, 184, 195
  - Anomalous 208, 209
    - absolute magnitudes 210
    - BL Boo 209, 211
    - evolution 210
    - field 209
    - globular clusters 209
    - IR observations 209
    - light curves 209, 210
    - masses 210
    - periods 209
    - period–luminosity relation 191, 209
    - pulsation modes 209, 210
    - temperatures 210
    - TYC 1031 1252 1 211
    - instability strip 210
  - binary theory 9, 10, 184
  - BL Boo 208
  - BL Her 199, 200
  - Blazhko effect 189
  - blue loops 68
  - bump 121, 154, 187
    - resonance 188
  - classical 52, 68, 123, 124, 154, 168, 183–195, 197–199, 201, 204, 205, 207, 209
    - ages 183, 199
    - amplitudes 186
    - angular diameter 187
    - blue loops 194, 195
    - diameter 187
    - distance 187
    - evolution 183, 192–196, 199
    - first crossing 193–196
    - H-R diagram 193, 194
    - instability strip 183, 190, 193, 194, 299
    - IR observations 186, 192
    - light curves 185
    - luminosity 187
    - Magellanic Clouds 183, 193, 195
    - mass 183
    - metallicity 184
    - Milky Way 183
    - parallaxes 192
    - period changes 192, 194–196
    - periods 183
    - period–luminosity relation 184, 185, 189–192, 197, 198, 204
    - period–luminosity–color relation 190

Cepheids (*contd.*)

- radius 186
  - second crossing 194, 195
  - spectral types 183
  - standard candles 184
  - third crossing 194, 195
  - UV observations 186
  - distances 184
  - double mode 121
  - driving mechanism 183, 199
  - dwarf 233
    - AI Vel 235
  - evolution 207
  - hydrodynamical models 212
  - instability strip 206
  - light curves 212
  - period changes 207
  - Hubble constant 184
  - hydrodynamical calculations 154
  - IR observations 198
  - Magellanic Clouds 184
  - masses 192
  - naked eye 195
  - nonlinear effects 153
  - periods 74
  - period–gravity relation 240
  - period–luminosity relations 191
  - period–radius relation 240
  - Polaris 195, 196
    - amplitude 196
    - companion 195
    - evolution 196
    - luminosity 196
    - mass 195
    - mass loss 196
    - parallax 196
    - period change 196
  - populations 197, 198
  - pulsation constant 190
  - pulsation models 190
  - pulsation theory 192
  - s-type 185, 186
  - SU Cygni 186, 187
  - type I 183, 185, 204
  - type II 51, 63, 185, 191, 196–209, 212, 240
    - abundance anomalies 204
    - age 196, 199
    - amplitudes 201
    - atmospheres 204
    - binary systems 203, 207
    - BL Her 199, 201, 203, 206, 207
    - blue loops 206, 207, 212
    - CC Lyr 204
    - composition 203
    - crested 200
    - crossings 206
    - CWA 199
    - CWB 199
    - evolution 60, 199, 206, 207
    - flat-topped 200
    - globular clusters 197
    - HB morphology 204, 206
    - high-resolution spectroscopy 203
    - instability strip 199, 200, 206
    - IR observations 201, 203, 205, 206
    - light curves 200–203, 208
    - luminosities 205
    - M31 196
    - M32 196
    - M33 196
    - masses 196, 206
    - metallicity 199, 203, 204
    - nonlinear effects 202
    - parallaxes 205
    - peculiar 202, 203, 208
    - period changes 206, 207
    - period distribution 200, 201
    - period doubling 202
    - periods 199
    - period–luminosity relation 185, 198, 204–206, 211
    - progenitors 206
    - pulsation modes 205
    - RV Tau 200–202, 211–214
    - spectra 203
    - W Vir 199, 201, 206–208, 211, 212, 214
    - XX Vir 203
  - ultra-long-period 70
  - ultra-short-period 233
- Cetus 1, 2, 6
- Chandra telescope 226
- chaos 212
- charge-coupled device 20, 22, 25, 26, 172
- chemically peculiar stars 34
- noAp stars 244
  - pulsations 234
- chromospheres 35, 39
- classical Cepheids *see* Cepheids
- classical novae 44, 46
- nucleosynthetic processes 46
- cloud collapse 58
- adiabatic phase 59
  - isothermal phase 59
- cluster variables 157
- CNO cycle 60, 61, 68
- H-burning shell 61, 62, 64, 65, 68, 114, 115, 270
- collapsars 49

- colliding winds 42
  - color-magnitude diagram 58, 62, 64, 65, 68
    - M3 161
    - NGC 5053
      - pulsation cycle 162
    - SX Phoenicis stars 238
  - conductive opacity 54
  - constellation
    - Aquila 7, 21
    - Caelum 7
    - Centaurus 7
    - Cetus 2
    - Cygnus 7, 258
    - Equuleus 7
    - Ophiuchus 7
    - Scorpius 7
  - constitutive equations 56
    - linearized 86, 87
  - Conti scenario 71
  - continuity equation 94, 131
    - linearized 83, 84
      - Eulerian form 92
  - convection
    - Ledoux criterion 54, 259
    - mixing length theory 55, 218
      - white dwarfs 288
    - non-local nature 154
    - overshooting 55, 67, 69, 125, 149, 179, 194, 255
      - pulsation quenching 217
    - Schwarzschild criterion 54
    - semiconvection 255, 298
    - turbulent 123, 129, 171, 218, 243
    - white dwarfs 284
  - convective blocking mechanism 124, 125, 242
  - convective driving mechanism 277, 281, 282
  - coronae 39
  - CoRoT 27, 38, 131, 218, 240, 245–247, 268
  - Cowling approximation 132
    - Emdem's role 132
    - validity 132
  - Cox, J. P. 119
  - Credner, T. 2
  - CTTS 40
  - cycle of induction 12
  - Cygnus 7, 258
    - driving mechanism 281, 284
    - evolution 292
    - G117B-B15A 282
    - HL Tau 76 278, 279
    - hot 296, 298
      - composition 296
      - driving mechanism 298
      - gravities 296
      - instability strip 296
    - instability strip 292, 293, 295
      - purity 293
    - KIC 08420780 293
    - KIC 11911480 294
    - KIC 4552982 293, 294
    - KUV 02464+3239 281
    - light curves 275
    - massive 294
    - period changes 283
    - periods 277, 292
    - pulsation modes 277, 293
    - RY LMi 282
    - ultra-massive
      - GD 518 294, 295
    - V411 Tau 278, 279
    - ZZ Cet 6
  - DBV stars 278, 280, 287, 290, 292
    - amplitudes 277
    - driving mechanism 280–282, 284
    - evolution 275
    - GD 358 280
    - instability strip 276, 287, 288, 290, 292
      - DBA stars 287
      - purity 287, 293
    - KIC 8626021 288, 290
      - asteroseismology 291
      - He abundance profile 290
    - light curves 275
      - nonlinear effects 287
    - V777 Her 279
    - periods 277
    - pulsation modes 277, 288
      - changes 289
    - V777 Her 279, 280
      - Fourier transform 289
  - deep opacity bump 122, 251
  - Deneb 258, 259
  - density scale height 136
  - diffusion 34–36, 54, 68, 86, 115, 124, 244, 267, 273, 286, 290, 291, 299
- d**
- damping rate 127
  - DAV stars 292
    - amplitudes 277, 292
    - BPM 37093 294
    - crystallization 294, 295

- dimensionless offset 146, 149
    - asteroseismic significance 149
  - Diocletianus, Gaius Aurelius Valerius 12
  - Dionysius Exiguus 12
  - dispersion relation 136
  - distance scale 48, 198
  - Doppler effect 33
  - Doppler Imaging 37
  - double-mode stars 104, 159
  - DP Leo 14
  - DQ Herculis stars 45
  - DQV stars 275, 277, 278, 290
    - amplitudes 277, 290
    - driving mechanism 290, 291
    - evolution 275
    - instability strip 276, 290, 292
    - light curves 275, 280
    - magnetic fields 291
    - periods 277, 290
    - pulsation modes 277
    - pulsation vs. rotation 291
    - SDSS J103655.39+652252.2
      - magnetic field 291
    - SDSS J142625.71+575218.3 291
      - magnetic field 291
  - Drake, A. J. 27
  - dredge-up
    - first 62, 69
    - second 69
    - third 69, 220
  - driving mechanisms 113
    - $\delta$  124, 282
    - $\epsilon$  104, 113–117, 258, 282, 283
      - $\alpha$  Cygni stars 117
      - $\delta$  Scuti stars 116
      - growth rate 116
      - GW Vir stars 116
      - He WD merger 116
      - mass loss 116
      - Population III stars 116
      - post-He flash 116
      - stellar disruption 115, 116
      - upper stellar mass limit 115, 116
    - $\gamma$  50, 51, 113, 117, 168, 183, 199, 218, 242, 244
      - H ionization 110, 117, 119, 120, 123
      - He ionization 108, 110, 117, 119, 120, 123
      - partial ionization regions 119, 120
    - $\kappa$  50, 51, 113, 117, 168, 183, 199, 218, 219, 242, 244
      - H ionization 117, 120, 123
      - He II ionization 119
      - He ionization 108, 110, 117, 120, 123
        - partial ionization regions 119, 120
  - convective blocking 124, 125, 242
  - convective driving 124, 277, 281, 282
  - damping layers 107, 110
  - deep opacity bump 122
  - driving layers 90, 107–110
  - flares 130
    - neutron stars 130
    - Sun 130
  - gravitational waves 129
  - heat 119
  - mergers 130
  - nuclear fission 115
  - opacity bump 51, 120, 121, 249–251, 265–267
  - self-excitation 107, 125, 132
  - starquakes 130
  - stochastic driving 51, 125, 128, 218
    - $\beta$  Cep stars 246
    - mean mode energy 127
    - peak height 128
    - rms velocity 127
  - strange-mode instability 116, 122, 257, 258, 261
  - tidal excitation 129
    - HD 187091 129
    - KIC 4931738 129
    - KOI 54 129
    - sub-stellar bodies 129
  - valve mechanism 113, 114
- DS1 33
- DW Lyncis stars 264
  - DW Lyn 265
  - HS 0702+6043 267
- DW Ursae Majoris 46
- dwarf irregular galaxies 209
  - Leo A 209
  - Phoenix 209
  - Sextans A 209
- dwarf novae *see* cataclysmic variables
- dwarf spheroidal galaxies 196, 208–210, 239
  - anomalous Cepheids 208
  - Carina
    - SX Phe stars 239
  - Draco
    - anomalous Cepheids 210
    - RR Lyrae 210
  - Fornax
    - SX Phe stars 239
  - RR Lyrae 173, 175, 181
- DY Persei stars 42
- dynamical instabilities 36, 85, 96
- dynamoes 34

**e**

- E-AGB 65, 69
- earthquakes 130
- EC 14026 stars 51, 109, 263–265, 268–270, 272
  - amplitudes 264
  - binary companions 269
  - driving mechanism 266
  - EC 14026-2647 268
  - globular clusters
    - $\omega$  Cen 269, 270
    - NGC 2808 269, 271
  - gravities 269
  - He abundances 273
  - light curves 263
  - periods 264, 269
  - PG 1219+534
    - light curve 265
  - pulsation modes 264, 269
  - temperatures 269
  - UV observations 263
  - V1093 Her 269
- Échelle diagram 143, 150
  - construction 150
  - replicated 140
  - scaled 150
  - semi-scaled 151
- eclipsing planets 33
- eclipsing variables 30
  - contact 30
  - detached 30
  - overcontact 30
  - semi-detached 30
  - transient 30
- Eddington, Arthur Stanley 100, 107
- Edinburgh-Cape Survey 8
- EHB stars 64, 66, 116, 263, 268–270, 273
  - inner structure 268
  - rotation 268
- EHe stars 43
- Einstein Telescope 304
- EL Canum Venaticorum stars 299
- ellipsoidal variables 38
  - $\alpha$  Virginis 38
  - planet-related 39
  - Spica 38
  - white dwarfs 39
- ELM-DAV stars 275, 276, 293, 294
  - amplitudes 277
  - composition 294
  - gravities 296
  - instability strip 276, 296
  - light curves 297
  - low-mass ZZ Cetis 296
    - masses 296
    - periods 277, 296
    - pulsation modes 277
      - SDSS J111215.82+111745.0 297
        - $p$ -mode pulsations 296
      - SDSS J151824.11+065723.2 297
      - SDSS J161431.28+191219.4 297
      - SDSS J184037.78+642312.3 296, 297
      - SDSS J222859.93+362359.6 297
    - temperatures 296
- ELM-HeV stars 276, 298, 299
  - 1SWASP J024743.37-251549.2B 298, 299
    - mass 299
  - amplitudes 277
  - BEP stars 299
  - driving mechanism 299
  - evolution 299
  - instability strip 299
    - Cepheid-RR Lyrae extension 299
  - periods 277
  - pulsation modes 277
- Emdem–Cowling approximation 132
- energy conservation equation 55, 78, 81, 85, 112, 131
  - linearized 85, 110
- energy generation 55, 56, 80, 86, 114, 117, 120
- energy transfer equation 91, 119, 131
  - linearized 86
- entropy 55
- EO Ceti 270
- ephemeris 18–20
  - definition 18
  - time 13
- Epoch
  - definition 14
- EQ Lyncis 300, 301
- equation of state 56, 63, 73, 88, 100
  - neutron stars 303
  - pressure, temperature exponent 88
- Equuleus 7
- EROS 7
- eruptive variables 39
- Euler equation 132
- Eulerian formalism 55, 56
- Eulerian perturbation 134
- evanescence 136
- EX Lupi 40
- EXor stars 40
  - EX Lupi 40
- extrasolar planets 33, 38
- extreme He stars 257, 258
- extrinsic variables 30

**f**

F-supergiant variables 42  
 Fabricius, David 1–4, 20  
 failed supernovae 49  
 Far-Ultraviolet Spectroscopic Explorer 287  
 Ferguson, J. W. 87  
 FEROS 247  
 first dredge-up 62, 67, 69  
 first law of thermodynamics 79, 108  
 fitting techniques 150  
 FK Comae Berenices stars 35, 38, 130  
 – blue stragglers connection 38  
 – FK Com 38  
 – non-radial pulsations 38, 130  
 Flamsteed numbers 6  
 Flamsteed, John 6  
 Flare stars 39  
 Fleming, Williamina 157  
 flip-flop phenomenon 38  
 forced oscillations 129  
 Fornax dwarf spheroidal 208  
 Fourier decomposition 163  
 – RR Lyrae 163  
 Fourier transform 289  
 FQ Aquarii stars 256  
 frequency bumping 139  
 frequency separation  
 – large 141, 146, 152  
 – small 146, 148, 152  
 frequency spacing 97, 98, 141  
 Fritsch, Johann 4  
 FU Orionis stars 39, 40  
 fundamentalization 239

**g**

G117B-B15A 282  
 Gaia 8, 28, 166  
 galaxies  
 – dwarf irregular 209  
 – Leo A 209  
 – Phoenix 209  
 – Sextans A 209  
 – dwarf spheroidal 196, 208–210, 239  
 – anomalous Cepheids 208  
 – Carina 239  
 – Fornax 208, 239  
 – RR Lyrae 173, 175, 181  
 – Sculptor 208  
 GALEX 158, 159, 226  
 GALEX J201337.6+092801 269  
 GCVS 4, 7, 24, 29, 32, 33, 41–44, 77, 185, 199, 209, 216, 233, 245, 246, 251, 253, 256, 269, 270, 279

GD 358 280  
 GD 518 294, 295  
 GD 66 14  
 globular clusters 22, 24, 35, 58, 64, 157, 164, 165, 167, 172–177, 179–181, 191, 196, 197, 200, 201, 204–206, 209, 211, 217, 220, 227, 234, 236, 237, 239  
 –  $\omega$  Centauri 157, 173, 180, 269, 270, 273  
 – distances 166  
 – M15 173, 179  
 – M22 159  
 – M28 200  
 – M3 161, 173, 178, 179, 197  
 – M5 173, 179, 200  
 – ZNG 1 268  
 – M53 173  
 – M62 173  
 – M92  
 – V7 211  
 – NGC 2808 269, 271, 273  
 – NGC 4147 180  
 – NGC 5024 173  
 – NGC 5053 161, 162  
 – NGC 5139 157, 173, 180, 269, 270, 273  
 – NGC 5272 161, 173, 178, 179, 197  
 – NGC 5466  
 – BL Boo 209–211  
 – NGC 5904 173, 179, 200  
 – ZNG 1 268  
 – NGC 6266 173  
 – NGC 6341  
 – V7 211  
 – NGC 6388 167, 175, 204, 205  
 – NGC 6441 167, 175, 204, 205  
 – NGC 6626 159, 200  
 – NGC 7078 173, 179  
 – Oosterhoff groups 165  
 – Palomar 3  
 – type II Cepheid 204  
 – Reticulum 164, 166  
 – second-parameter problem 173  
 – SX Phoenicis stars 238, 239  
 – white dwarfs  
 – crystallization 294  
 Goodricke, John 3, 4, 8, 21, 184  
 gravitational potential energy 74, 89, 106  
 gravity waves 125, 147  
 Green, Elizabeth M. 267  
 Gregorian Calendar 11, 12  
 growth rate 107, 116  
 GW Librae stars 276, 300  
 – accretion 300  
 – amplitudes 277  
 – EQ Lyn

- light curve 300, 301
- GW Lib 300
- instability strip 300
- periods 277
- pulsation modes 277, 300
- GW Virginis stars 51, 121, 275, 276, 278, 284–288
  - amplitudes 277
  - driving mechanism 282–284
  - evolution 275, 282, 286
  - GW Vir 282, 285
  - instability strip 275, 276, 282, 283, 285
    - blue edge 285
    - purity 293
    - red edge 286
  - IR Peg 282
  - Kohoutek 1-16 282
  - light curves 275
  - masses 286
  - periods 277
  - PG 1159 stars 282
  - PG 1159-035 282, 285
  - PG 1707+427 282
  - PG 2131+066 282
  - propagation diagrams 137, 138
  - pulsation modes 277
    - rotational splitting 286
  - RXJ 2117+3412 278
  - structure 286
  - temperatures 282
  - V817 Her 282
- h**
- H-burning 65, 70
  - classical novae 46
  - H exhaustion 61, 68, 193
  - shell 61, 62, 64, 65, 67, 68, 114, 115, 206, 219, 270
- H-R diagram 41, 50, 52, 57, 60, 63, 66, 126, 179, 193, 194, 206, 211, 215, 245, 246, 258, 269, 296, 299
  - $\gamma$  Dor stars 240
  - asteroseismic 148
  - hot subdwarfs 263, 265
  - lower 233, 234, 236, 242, 243
  - M3 161
  - Maia stars 248
  - NGC 5053
    - pulsation cycle 162
  - spectroscopic 260, 272, 286, 288, 290, 292, 293, 295
    - GW Vir stars 283
    - hot subdwarfs 263, 264
    - pulsating WDs 276
    - upper 245, 246, 250, 253, 258, 259
      - spectroscopic 257
- Hadrian 4
- HADS 235, 238
  - amplitudes 235
  - nonlinear effects 235
- Halley, Edmund 4, 6
- Harding, Karl Ludwig 4
- Harvard College Observatory 22, 23, 157, 184, 185
  - Circulars 185
- HATnet 38
- Hayashi track 60
- HB 58, 63, 64, 66, 149, 161, 164, 167, 172, 177, 179–181, 206, 207, 263, 267, 270, 273
  - rotation 268
- HD 12545 37
- HD 50230 245
- HD 54764 254
- HD 62150 259
- HD 91619 259
- HD 98410 254
- HD 100262 259
- HD 141318 254
- HD 154708 244
- HD 160641 256
- HD 163899 253, 254
- HD 168183 254
- HD 168476 256
- HD 168607 259
- HD 170935 247
- HD 180642 245, 246
- HD 187091 129
- HD 218994AB 244
- HdC stars 43
- He
  - flash 62–65, 67, 149
  - second ionization 74, 299
  - variables 35
- He-burning 63–65, 67–71, 114, 115, 149, 206
  - blue loop 67, 194
  - core 68, 69
  - flash 62–65, 67, 149
  - shell 65, 67, 206, 220
  - supergiants 255
- He-sdB stars 272
  - amplitudes 264
  - driving mechanism 273
- LS IV –14°116 264, 272
  - He abundance 273
  - light curve 272
- periods 264
- pulsation modes 264, 273

- Heliocentric Julian Date 13, 15
  - Helioseismology 131, 145, 149, 152
    - global 149
    - local 149, 150
    - solar rotation profile 144
    - sound speed profile 152, 153
  - Herbig Ae/Be stars 40
    - accretion disks 43
    - Herbig-Haro nebulosity 41
    - UXor stars 41
  - Herbig-Haro nebulosity 41
  - Hermitian operators 97
  - Herschel telescope 226
  - Herschel, J. 4
  - Herschel, W. 4
  - Hertzsprung gap 61, 68
  - Hertzsprung progression 187
  - Hertzsprung, E. 68
  - Hevelius, Johannes 1
  - HgMn stars 36
  - high-mass star 52, 67, 69–71, 126, 302
  - high-mass X-ray binaries 47
  - Hipparcos 28, 166, 192, 196, 221, 228
  - HM Librae 256
  - Holwarda, Johannes 1
  - Holy Roman Empire 12
  - homologous motions 99
  - Hooke's Law
    - oscillation period 75
  - hot bottom burning 69
  - hot DAV stars *see* DAV stars
  - HR 4338 259
  - HR 8020 259
  - HS 0702+6043 267
  - Hubble constant 184
  - Hubble, Edwin 197
  - Hubble Space Telescope* 27, 74, 158, 166, 181, 192, 195, 205, 225, 290, 300
  - Hubble–Sandage variables 41
  - Humphreys–Davidson limit 126, 261
  - HW Virginis stars 33
  - hybrid pulsators 51, 136, 241
    - $\beta$  Cep/SPB 250
      - HD 50230 245
    - $\delta$  Sct/ $\gamma$  Dor 137, 236, 241, 243, 249, 250
    - $\delta$  Sct/roAp 236, 242
      - HD 218994AB 244
      - KIC 8677585 244
    - $\delta$  Sct/solar-like pulsators 236, 242
    - $\gamma$  Dor/ $\delta$  Sct 241
    - EC 14026/PG 1716+426 264, 265
      - HS 0702+6043 267
    - sdBV<sub>gp</sub> 264, 265
      - HS 0702+6043 267
      - sdBV<sub>rs</sub> 264, 265
        - HS 0702+6043 267
  - hydrodynamics
    - basic equations 131
      - Cowling approximation 132
  - hydrostatic equilibrium 55, 76, 78, 93
  - hypernovae 48, 49
- i*
- IAU 13, 29, 198
  - Iben, I., Jr. 58
  - inference techniques 150
  - instability strip
    - Cepheid 66
    - classical 60, 64, 66, 67, 70, 120, 125, 199
      - ELM-HeV extension 299
    - edges 123
      - blue edge 123
      - red edge 123
    - RR Lyrae 60, 161
      - blue edge 161
      - red edge 161
    - RRab stars 161
    - RRc stars 161
    - RRd stars 161
    - type II Cepheids 60
  - interferometry 74, 152, 187, 221, 225
    - $\alpha$  Orionis 231
    - Betelgeuse 231
    - IOTA interferometer 225
  - intermediate polars *see* cataclysmic variables
  - intermediate-mass star 43, 66–70, 192
  - intermediate-mass X-ray binaries 47
  - International Atomic Time 13
  - intrinsic variables 30
  - inversion techniques 150
  - IOTA interferometer 225
  - IR Pegasi 282
  - IRAS 214
  - irregular variables 231
    - classification 232
    - insufficient data 232
    - Lb type 216
    - Lc type 216
    - semi-regulars connection 232
  - IRSF/SIRIUS survey 227
- j*
- J010415.99+144857.4 298
  - J023520.02-093456.3 298
  - J0247-25A 299
  - Jeffery, S. C. 50

- Jesus Christ 12
- Joy, Alfred 197
- Julian Calendar 11, 12
  - cycle 12
  - lunar cycle 12
  - proleptic nature 12
  - solar cycle 12
  - zero point 11
- Julian Date 12–14
  - Barycentric 13
  - Heliocentric 13, 15
  - online tools 12
- Julian Day 12
  - modified 12
- k**
- Kelvin, Lord 130
- Kelvin-Helmholtz timescale 78, 88, 89
- Kepler* 27, 28, 33, 35, 38, 44, 124, 129, 131, 140, 143, 148, 151, 170, 171, 218, 230, 234, 236, 237, 241, 244, 245, 253, 263, 266, 268, 270, 287, 288, 290, 291, 293, 294
  - K2 mission 28
- kernel
  - rotation 142
- KIC 02697388 266, 267
- KIC 08420780 293
- KIC 10195926 237
- KIC 11285625 236
- KIC 11911480 294
- KIC 4350501 151
- KIC 4552982 293, 294
- KIC 4931738 129
- KIC 5356201 151
- KIC 6442183 140, 143
- KIC 6954726 44
- KIC 8626021 288, 290, 291
- KIC 8677585 244
- KIC 9700322 234
- Kirch, Gottfried 3, 4
- Koch, J. A. 4
- Kohoutek 1-16 282
- KOI 54 129
- Kramers Law 117, 118, 120
- Kramers–Eddington Law 96, 117
- KUV 02464+3239 281
- KV Velorum 32, 33
- l**
- LADS
  - amplitudes 235
- Lagrangian formalism 55, 56
- Lagrangian perturbation 82, 95, 111, 291
- Lamb frequency 134, 137, 138
- Lane–Emden equation 102
- LAOL 121, 122
- large frequency separation 146, 152
- Large Magellanic Cloud 164, 183, 188, 189, 191, 193, 195, 198, 200–202, 205, 207, 209, 210, 217, 221, 222, 229, 232, 238
  - $\beta$  Cep stars 251
  - HADS 239
  - Mira variables 227
  - SPB stars 251
- Large Synoptic Survey Telescope 8, 26, 33
- LARV 216
- LAWE 87, 90, 92, 95–97, 103
  - and the Schrödinger equation 95
  - eigenfunctions 96
    - fundamental mode 96
    - hermiticity 97
    - nodes 96
    - orthogonality 97
    - self-adjoint 97
    - standing waves 96
  - eigenvalues 96
    - asymptotic behavior 98
    - fundamental mode 96
    - recurrence relations 96
  - Eulerian form 92
  - homogeneity 94
  - homologous case 99
    - solution 99
  - Lagrangian form 91
  - linear differential operator 95
  - normalization 94
  - numerical integration 98
    - PULS 103
    - techniques 98
  - oscillation periods 96
  - polytropic case 99
    - solutions 98, 100–102
  - Sturm–Liouville equation 95
    - implications 96
  - RR Lyrae case 102
    - solutions 102–105
- Lawrence Livermore National Laboratory 121
- LBV stars *see* luminous blue variables
- Leavitt, Henrietta 184, 185, 192, 197
- Leavitt's Law 184, 185, 189–192, 197
  - type II Cepheids 204
- Ledoux criterion 54, 259
- Ledoux, Paul 54
- Legendre equation 95
- Legendre polynomials 135
- Leo A dwarf irregular 209
- levitation 34, 266, 267, 273

- light curve
  - definition 14
  - phased 14
- light-travel time effect 14
  - planet detection 14
- LIGO 304
  - Advanced 304
- linear theory 81, 83–86, 101, 153, 154
  - adiabatic 87
    - LAWE 90–92
  - boundary conditions 92
    - center 92, 93, 95
    - surface 93, 94
  - limitations 101
  - modern usage 156
  - separation of variables 91
- LNAWE 109, 111
  - Eulerian form 111
  - Lagrangian form 111
  - solution 111, 112
- local approximation 136
  - solutions 136
    - dispersion relation 136
- LONEOS 26
- long-period variables 2, 3, 23, 216–218, 220, 222, 227, 230
  - bulge 217
  - driving 218
  - emission lines 225
  - spectroscopy 217
  - Wood diagram 221
- Lorentzian profile 127
  - deviations 127
- Los Alamos National Laboratory 121
- low-mass star 40, 57–60, 63, 66–68, 116
- low-mass X-ray binaries 47
- LPB stars 251
- LS IV – 14° 116 264, 272
  - chemical peculiarities 273
  - He abundance 273
  - light curve 272
- luminous blue variables 41, 42, 51, 52, 70, 71, 261
  - $\eta$  Carinae 41
    - 1890 eruption 260
    - Great Eruption 260
  - eruptions 41
  - giant outbursts 41
  - P Cygni 41
  - pre-LBV stars 261
  - S Doradus 41
  - strange modes
    - mass loss 261
    - RSG connection 261
- LV Trianguli Australis 256
- m**
  - M15 173
  - V53 179
  - M22 159
  - M28 200
  - M3 161, 173, 179, 197
    - V79 178
  - M31
    - RR Lyrae 181
      - globular clusters 181
  - type II Cepheids 196
  - M32
    - type II Cepheids 196
  - M33
    - type II Cepheids 196
  - M5 173, 179, 268
  - M53 173
  - M62 173
  - M92
    - Anomalous Cepheids
      - V7 211
- MACHO 7, 8, 25, 38, 221
- Magellanic Clouds 25, 173, 175, 181, 184, 185, 190, 195, 196, 198, 201, 202, 205, 209, 220, 251
  - Mira variables 227
- Magnetars 130, 302
- Magnetic activity 39
- Magnetic field 34–37, 45, 46, 78, 142, 150, 171, 244, 249, 286, 290, 291
  - dipole 35
  - oblique pulsator model 243
  - roAp stars 242, 243
- Maia stars
  - instability strip 248
  - Maia 248
  - periods 248
  - pulsation theory 248
  - spectral types 248
- main sequence 44, 58, 61, 68, 69, 71, 126, 149, 183, 190, 192, 193, 211, 230, 233, 236, 240, 242, 244, 249
  - lower 51, 52, 233, 234
  - upper 51, 52, 245, 248, 249
- Maraldi, Giacomo 4
- MARV 216
- mass conservation equation 55, 110
- massive MS pulsators 249
- mean molecular weight 74
- mechanism *see* driving mechanism
- Merrill, P. W. 48

- metallicity 57, 67, 70, 71, 102, 115, 116, 121, 180, 192, 200, 220, 227, 234, 236, 238, 251, 273, 299
  - $\alpha$  elements 57
  - RR Lyrae 162
- Meton of Athens 12
- Metonic cycle 12
- Milky Way 24, 47, 51, 68, 172–175, 177, 179–181, 183, 184, 192, 195, 196, 203, 208, 220, 234, 236, 237, 251, 259
  - bulge 57, 164
  - field 164
  - halo 57, 164
  - thick disk 164
  - thin disk 164
- millisecond pulsars 294
- Mira variables 2, 3, 8, 52, 77, 215, 218–230
  - $\chi$  Cygni 3, 4, 219, 223, 225
  - 68 (Bode) Leonis 6
  - ages 220
  - amplitudes 216, 219, 222
  - angular diameters 221
    - Barnes–Evans method 225
    - direct imaging 225
    - interferometry 225
    - lunar occultation 225
  - BH Cru 229
  - bulge 217
  - C-rich 224
  - classification 220
    - C-rich 220
    - O-rich 220
  - companion 226
  - convection
    - supergranular 228
  - dust shells 221
  - etymology 1, 3
  - evolution 219, 226, 227
    - planetary nebulae connection 227
    - progeny 227
    - RV Tau progenitors 227
  - IR observations 223, 224, 226
  - light curves 219, 223, 227
    - classification 227
    - IR 223
    - radio 223
    - wavelength dependence 224
  - LMC 217
  - mass loss 220, 225–227
    - metallicity dependence 227
  - mass loss-period correlation 227
  - masses 220
  - metallicities 220
  - Mira (*o* Ceti) 1–4, 8, 21, 215, 216, 221, 225–227
    - mass 77
    - mass loss 226
    - mean density 77
    - period 77
    - radius 77
    - ram-pressure stripping 226
    - resolved image 225
    - space motion 226
    - tail 226
  - molecular layers 221
  - O-rich 225
  - OH masers 221
  - parallaxes 221
  - period changes 228, 229, 231
    - BH Cru 229
    - shell flashes 228, 229
    - T UMi 228
  - period meandering 229
  - periods 216, 217
  - period–gravity relation 240
  - period–luminosity relation 222, 227
  - period–radius relation 240
  - progenitors 220
  - pulsation modes 220, 221, 230
    - R Aquarii 4
    - R Cancri 4
    - R Hydrae 3, 4
    - R Leonis 3–6
    - R Serpentis 4
    - R Virginis 4
  - radio observations 223
  - S Serpentis 4
  - schematic diagram 224
  - shock waves 225
  - spectroscopic identification 249
  - standard candles 222
  - T UMi 228
  - tail 226
  - temperatures 219
  - UV observations 225, 226
  - X-ray observations 226
- mixing length theory 55, 218
  - $\gamma$  Dor stars 241, 243
- modes
  - $\gamma$  140
  - $\pi$  140, 143
  - avoided crossings 139, 141
  - coupling 137
  - $f$  132, 138
  - families 132
  - frequency bumping 139
  - $g$  132, 136, 138

modes (*contd.*)

- period spacings 149
- ray diagrams 147
- restoring force 132
- identification 150
  - techniques 150
- leakage 144
- mixed
  - eigenfunctions 137, 140
  - evolved stars 143
  - GW Virginis stars 138
  - red giants 138, 140
  - subgiants 140
- neutron stars
  - curvature 302
  - interface 302
  - spacetime 302
  - trapped 302
  - w 302
- nomenclature 132
- $p$  132, 136, 138
  - ray diagrams 147
  - restoring force 132
- prograde 143
- pseudo 136
- rapidly rotating stars 145
- retrograde 142
- rosette 145
- rotational splitting 140, 143
  - Sun 143, 144
- sectoral 135
- splitting
  - magnetic 142
  - rotational 140, 143
- strange 42, 50, 116, 122, 257, 258
- tesseral 135
- trapping 136, 143
  - boundaries 149
  - zonal 135
- moment of inertia
  - oscillatory 75, 97, 127
- momentum conservation equation
  - 56, 131
  - linearized 84
    - physical interpretation 84
- Montanari, Geminiano 3, 4
- Moon 12, 22, 33
- MOST* 27, 42, 122, 218, 253, 254
- Mount Wilson Observatory 197
- Mukadam, A. 301

**n**

- Napoleonic Wars 12
- NASA 225

- Goddard Space Flight Center 102
- Navier–Stokes equation 131, 132
- Ne-burning 70
- neutrinos 48, 49, 55, 62, 283
  - plasmon 290
- neutron stars 13, 14, 47, 49, 70, 130, 275, 294, 302–304
  - accreting 47
  - non-radial oscillations 302, 303
  - pulsating 275, 302
    - flares 302
    - starquakes 302
  - pulsations
    - driving mechanisms 302, 303
    - radial oscillations 302
  - structure 303
- NGC 2808 269, 271, 273
- NGC 300
  - $\alpha$  Cygni stars 259
- NGC 4147 180
- NGC 5024 173
- NGC 5053 161, 162
- NGC 5139 *see*  $\omega$  Centauri
- NGC 5272 *see* M3
- NGC 5466
  - BL Boo 209, 210
    - binarity 211
    - $O - C$  diagram 211
    - period change 211
- NGC 5904 *see* M5
- NGC 6266 *see* M62
- NGC 6341 *see* M92
- NGC 6388 167, 175, 204, 205
- NGC 6441 167, 175, 204, 205
- NGC 6626 200
- NGC 6656 159
- NGC 6826 287
- NGC 7078 *see* M15
- noAp stars 244
  - relation to roAp stars 244
- nomenclature
  - Argelander scheme 5
    - extended 7
  - Bayer letters 5
  - challenges 8
  - Flamsteed numbers 6
  - surveys 8
  - V numbers 7
- non-adiabatic effects 90
- non-adiabatic theory 105–109
  - blue subdwarfs 266

- LNAWE 109, 111
  - Eulerian form 111
  - Lagrangian form 111
  - solution 111, 112
- phase lags 112, 113
- work integral 108, 110, 112, 284
- non-radial oscillations 51, 130, 249
  - asymptotic behavior
    - $p$  modes 146, 149
  - displacement vector 135
  - eigenfrequencies
    - asymptotic behavior 146, 149
    - degeneracy 140
    - magnetic splitting 142
    - rotational splitting 140, 143
    - solar model 138, 141
    - Sun (SOHO) 138, 142
  - eigenfunctions 133
    - mixed-mode case 137, 140
    - Sun 134, 139
  - linear, adiabatic case 132
  - local approximation 136
    - dispersion relation 136
    - solutions 136
  - mode families 132, 138
    - $f$  132, 138
    - $g$  132, 136, 138
    - $p$  132, 136, 138
  - evanescence regime 136
  - GW Vir model 137, 138
  - solar model 138, 141
- nonlinear theory 153, 154, 156, 171, 202
  - $\beta$  Cep stars 245
  - BX Cir 255
  - DAVs 287
  - DBVs 287
  - hydrodynamical calculations 154
    - 3D models 154
  - mode interactions 156
  - red variables 218
  - resonances 154, 156
    - bump Cepheids 154
  - SPB stars 250
  - V652 Her 255
- Northern Sky Variability Survey 15, 26
- nova-like stars
  - RW Tri stars 46
  - UX UMa stars 46
- novae *see* cataclysmic variables
- novelike stars *see* cataclysmic variables
- NR Lyrae 170
- nuclear reaction rates 87, 114
  - NACRE database 87
- Nyquist frequency 17

## O

- O-burning 70
- O – C diagram 18–20, 178, 195, 207, 211, 212, 228, 282
- O-type stars
  - massive 42
- oblique pulsator model 35, 243
  - $\beta$  Cep stars 249
- oblique rotator model
  - pulsars 302
- Odessa Observatory 22
- OGLE 7, 25, 30, 38, 181, 188, 190, 191, 193, 202, 203, 209, 210, 217, 221, 222, 239, 299
- OGLE-BLG-RRLYR-02792 299
- Oosterhoff groups *see* RR Lyrae stars
- OP 87, 121
- opacity
  - bump mechanism 121, 249, 251, 265–267
  - conductive 54
  - databases
    - LAOL 121, 122
    - low-temperature 87
    - OP 87, 121
    - OPAL 87, 121, 122
  - deep opacity bump 251
  - monochromatic 56
  - Rosseland mean 54, 87, 117, 118, 122, 284
    - Kramers Law 117, 118, 120
- opacity bump mechanism 121, 249, 251, 265–267
- OPAL 87, 121, 122
- open clusters 68, 192, 234
- Ophiuchus 7
- Orbiting Astronomical Observatory 27
- OSARG 217, 222, 229, 230
  - bulge 217
  - LMC 217
  - multimode pulsation 222
  - period–luminosity relation 230
- oscillatory moment of inertia 75, 97, 127
- overshooting 55, 67, 69, 125, 149, 179, 194, 255

## P

- P Cygni 4, 41
- Palomar 3
  - type II Cepheid 204
- Pan-STARRS 33
- peak-bagging 150
- pendulum
  - oscillation period 75
- Per OB1 association 230
- period determination 16
  - aliases 13, 18, 289

- period determination (*contd.*)
  - methods 17
  - Nyquist frequency 17
  - Period04 17
  - periodogram 13, 17
  - resolution 17
  - spurious periods 18
  - power spectrum 17, 127, 128, 136, 142–144, 146, 148–151, 240, 263, 266, 267, 289
  - prewhitening 17
- period doubling 171, 172
  - BL Her stars 202
  - Blazhko effect 156
  - nonlinear models 155
  - RR Lyrae 171, 202
- period ratios 103, 104, 121, 152, 169, 234
- period spacings
  - constraints on overshooting 149
  - red giants
    - evolutionary stage 149
    - mixed modes 149
- period–gravity relation 240
- period–mean density relation 63, 76, 77, 99, 165, 176, 177, 189, 194, 204, 217, 221
- period–radius relation 239
- periodogram 13, 17
- perturbation theory 82
- Petersen diagram 168, 169
- PG 1159 stars *see* GW Virginis stars
- PG 1159-035 282, 285
- PG 1219+534 265
- PG 1707+427 282
- PG 1716+426 stars 263–265, 269, 270, 272
  - amplitudes 264
  - driving mechanism 266
  - He abundances 273
  - KIC 02697388 263
    - light curve 266
    - power spectrum 267
  - light curves 263
  - periods 264
  - pulsation modes 264
- PG 2131+066 282
- PGPUC Online 103
- phase
  - definition 14
  - lags 105, 112, 113
- Phoenix dwarf irregular 209
- photoelectric photometry 24
- photographic methods 22
  - photometry 22, 23
  - spectroscopy 23
- photometers 24
- photometric bandpasses 16
- photometric systems
  - 2MASS 16
  - Johnson-Cousins 16
  - Sloan 16
  - Strömgren 16
- photomultiplier tube 25
- Pickering, Edward C. 184, 185
- Pigott, Edward 3, 4, 21, 184
- Planck function 54, 159
  - Rayleigh-Jeans tail 159
- Planet detection 14
  - transits 28, 33
- planet-hosting stars
  - DP Leo 14
  - GD 66 14
  - QS Vir 14
  - V391 Pegasi 14
- planetary nebulae
  - Mira progeny 227
- PLATO 28
- Pleiades
  - Maia 248
- PNNV stars 277, 285
- Poisson equation 132
- Polaris 195, 196
- polars *see* cataclysmic variables
- polytropes 55, 82, 97–100, 102, 104, 132, 154
  - Lane–Emden equation 102
  - polytropic index 97–99, 104
    - RR Lyrae, effective 97
    - Sun, effective 97
  - standard model 100
- Pontificia Universidad Católica de Chile 102
- Pope Gregory XIII 11
- Population I 52, 161, 197–199, 233, 234
- Population II 51, 197–199, 234
- Population III 116
- post-AGB stars 43, 58, 66, 69, 211, 212, 214, 268, 285
- power spectrum 17
  - $\beta$  Cep 249
  - 16 Cygni A 148
  - damping rate 127
  - linewidth 127, 128
  - maximum 149, 152
    - scaling relations 149
  - PG 1716+426 stars
    - KIC 02697388 267
  - RR Lyrae 171
  - small frequency separations 151
  - smoothing 151
  - solar oscillations 142

- rotational splitting 144
  - stochastic driving 128
  - V777 Her 289
  - PPI chain 60
  - pre-cataclysmic binary 33
  - pre-HB phase 58, 63, 64
  - pressure scale height 93, 94, 136
  - Preston, G. W. 162
  - prewhitening 17
  - prograde waves 143
  - propagation diagrams 136, 285
    - GW Virginis stars 137, 138
  - Proxima Centauri 37
  - pseudo-modes 136
  - PTF 38
  - Ptolemy 3
  - PTTS 40
  - Pulfrich, Carl 23
  - pulsars 302
    - millisecond 294
    - oblique rotator model 302
    - pulsation scenario 302
    - spin-down rates
      - pulsation 302, 303
  - pulsation constant ( $Q$ ) 77, 189, 194, 204, 221
    - Cepheids 190
  - pulsation energy 107
  - pulsation mechanism *see* driving mechanism
  - pulsation theory 51, 63, 73, 78, 130, 192, 193, 280, 281
    - assumptions 78
    - basic equations 78
      - energy conservation 78
      - linearization 81
    - equilibrium state 78
    - exact solutions 81
    - linear theory 81
    - Maia stars 248
    - nonlinear 153, 154, 171, 202
      - hydrodynamical calculations 154
      - resonances 154
    - perturbation theory 82
  - pulsations
    - mechanical nature 74
  - pulsators
    - classical 51, 115, 124, 125
    - non-radial 51, 249
    - hybrid 51
  - PV Telescopii stars 70, 123, 253, 256
    - amplitudes 254, 256
    - BD+13°3224 256
    - BX Cir subclass 253–257
      - BX Cir 255, 256
    - HD 168476 256
    - instability strip 257
    - periods 254, 256
    - pulsation modes 254
      - PV Tel 256
      - PV Tel I subclass 253, 254, 256, 257
      - PV Tel II subclass 253, 254, 256, 257
      - PV Tel III subclass 253, 254, 256, 257
        - HM Lib 256
        - LV Tra 256
        - V4152 Sgr 256
    - quasi-periodic variations 256
    - strange modes 257, 258
    - V652 Her 256
      - light curve 255
      - radial velocity curve 255
    - V652 Her subclass 253, 254, 256, 257
- q**
- $Q$  (pulsation constant) 77, 189, 194, 204, 221
  - QS Vir 14
  - quantum efficiency 25
  - quasi-adiabatic approximation 112, 119, 154
  - QZ Sagittarii 7
- r**
- R Aquarii 4
  - R Cancri 4
  - R Coronae Borealis stars 42, 43, 256
    - binary system 43
    - DY Centauri 43
    - DY Persei 42
    - final flash scenario 42
    - pulsations 42
    - R Coronae Borealis 4
    - strange modes 42
    - white dwarf merger scenario 42
  - R Hydrae 3, 4
  - R Leonis 3–6
  - R Scuti 4, 212, 213
  - R Serpentis 4
  - R Virginis 4
  - R-type binaries 32
  - Radcliffe Observatory 208
  - ram-pressure stripping 226
  - Rayleigh-Jeans law 159
  - rays
    - acoustic 147
    - diagrams 147
      - $g$  modes 147
      - $p$  modes 147
      - solar interior 147
    - gravity 147
  - recurrent novae 44, 46, 48

- red giant branch (*contd.*)
- red giant branch *see* RGB
- red supergiant variables 230
  - period changes 231
- red variables 215
  - classification 216
    - LARVs 216
    - MARVs 216
    - OSARGs 217
  - composition 217
  - convection 217
  - driving mechanism 218
    - convection 218
    - H ionization 218
  - evolution 222
  - H-R diagram 215
  - instability strip 217, 219
  - IR observations 221
  - nonlinear theory 218
  - period–luminosity relations 221, 222
  - radii 217
  - spectral types 217
  - Wood diagram 221
- relative radial displacement 82
- Reticulum 166
- retrograde waves 142
- RGB 44, 58, 60–69, 193, 268, 299
  - bump 62
- Rigel *see*  $\beta$  Orionis
- Ritter's relation *see* period-mean density relation
- Ritter, Arthur 77, 130
- roAp stars 35, 52, 109, 150, 233, 242–244
  - 33 Lib 244
  - amplitudes 234
  - driving mechanism 242
    - convection suppression 243
  - HD 154708 244
  - instability strip 242, 243
    - blue edge 244
    - red edge 244
  - KIC 10195926 237
  - light curves 237
    - rotational modulation 243
  - luminosities 242
  - metallicity 234
  - mode stability 244
  - model predictions 244
  - noAp stars 244
  - oblique pulsator model 243
  - periods 234, 242
  - pulsation modes 234, 242
  - temperatures 242
- Roche lobe 32, 45, 47
- rosette modes 145
- Rosseland mean opacity 54, 87, 117, 118, 122, 284
  - Kramers Law 117, 118, 120
- rotational kernel 142
- rotational splitting 144, 148, 280, 286, 294
- rotational variables 34
- RR Geminorum 114, 170
- RR Lyrae stars 6, 8, 15, 21, 51, 52, 63, 73, 82, 94, 97–99, 104, 108–110, 114, 115, 118, 120, 121, 125, 153, 157–174, 176–181, 183, 186, 189, 197–199, 202, 205, 206, 208–210, 217
  - $\Delta S$  index 162
  - 9th overtone 171
  - absolute magnitudes 165
    - near IR 166
    - visual 166
    - zero point 166
  - adiabatic exponents 89
  - ages 167
  - AS Cancri 114
  - Bailey diagram 155, 158, 159, 174
    - IR 160
    - theoretical 155
  - Bailey types 157, 158
  - binary systems 168
  - Blazhko effect 160, 169, 170, 240
    - explanation 171
    - XZ Cyg 178
  - chemical composition 161, 162
    - Fourier parameters 164
  - distance indicators 164
  - double-mode 159, 168, 169
  - driving mechanism 51, 108–110, 114, 115, 168
  - evolution 60, 64, 166, 167, 172, 176, 177, 179–181, 199
  - extragalactic 177, 181
    - M31 181
  - Fourier decomposition 163
  - globular clusters 172
    - $\omega$  Cen 157, 173, 180
    - M15 173, 179
    - M22 159
    - M3 161, 173, 178, 179
    - M5 173, 179
    - M53 173
    - M62 173
    - NGC 4147 180
    - NGC 5053 161, 162
    - NGC 6388 167, 175
    - NGC 6441 167, 175
  - halo 164
    - structure 164

- He enhancement 167
- high-resolution spectroscopy 163, 168
- hydrodynamical calculations 154, 155, 168
- infrared observations 164
- instability strip 60, 64, 161, 172, 299
  - blue edge 161
  - either–or zone 176
  - ELM-HeV extension 299
  - hysteresis zone 176
  - red edge 161
  - RRab stars 161
  - RRc stars 161
  - RRd stars 161
- IR observations 159, 160
- LAWE solutions 102–105
- light curves 159
  - Blazhko star 168, 170
  - bolometric 155
  - bump 168
  - hump 168
  - theoretical 155
- Local Group 164
- masses 161, 168
- models 171, 180, 181
  - nonlinear 155
- multiperiodic 170, 171
- nonlinear effects 153, 171
- NR Lyr 170
- Oosterhoff groups 165, 173–177
  - Oosterhoff gap 173, 177
  - Oosterhoff I objects 173, 175
  - Oosterhoff II objects 173, 175
  - Oosterhoff III objects 173, 175
  - Oosterhoff-intermediate objects 175, 177
- parallaxes 166
  - Hipparcos 166
  - *HST* 166
- period changes 177–181
  - globular clusters 180
  - He dredge-up 179
  - hydromagnetic effects 179
  - mass loss 179
  - semiconvection 179
  - V53 (M15) 179
  - V79 (M3) 178
  - XZ Cyg 178
- period doubling 155, 171, 172, 202
  - RR Lyr 171
- period range 157
- period–luminosity relation 164, 166, 206
- Petersen diagram 168, 169
- production efficiency 164
- progeny 167
  - pulsation 168
  - RR Gem 114, 170
  - RR Lyr 74, 102, 114, 171
    - chemical composition 102
    - discovery 157
    - evolutionary computations 103, 118
    - luminosity 102
    - mass 102
    - period 103
    - pulsation mode 103
    - temperature 102
  - RR Lyrae “gap” 167
  - RW Dra 169
  - second overtone 159
  - shock waves 168, 172
  - spectra 163
    - H emission 168
    - line doubling 168
    - RR Lyr 168
  - spectral types 162
  - temperatures 114, 157, 210
  - TW Lyncis 114
  - ultra-low-mass 299
    - evolution 299
    - nonlinear calculations 299
    - OGLE-BLG-RRLYR-02792 299
  - UV observations 158
  - V445 Lyr 171
  - velocity curves 168
  - XZ Cyg 178
- RRe stars 233
- RRs stars 235
- RS CVn stars 36, 37, 39
  - HD 12545 37
  - XX Tri 37
- RV Tauri stars 197, 199–202, 205, 211–214
  - abundance anomalies 213
  - amplitudes 212
  - CC Lyr 204
  - evolution 211
    - blue loops 212
  - hydrodynamical models 212
  - IR observations 214
  - light curves 200, 211–213
  - mass loss 214
  - Mira progeny 227
  - multimodality 212
  - O – C diagram 212
  - period changes 212
  - periods 199, 212
  - progeny 211
  - pulsation modes 212
  - R Scuti 4, 212, 213
    - chaos 212

- RV Tauri stars (*contd.*)
  - evolution 212
  - period change 212
  - spectral classification 213
    - Balmer lines 213
    - CN bands 213
    - RVa type 213
    - RVb type 213
    - TiO bands 213
    - water-vapor emission 214
- RW Draconis 169
- RW Triangulum stars 46
- RXJ 2117+3412 278
- RY Leonis Minoris 282
- s**
  - S Doradus stars 258
    - $\alpha$  Cyg subgroup 259, 261
    - instability strip 260, 261
    - missing S Dor's
      - yellow hypergiants connection 260
  - P Cygni 4
  - strange modes
    - mass loss 261
    - RSG connection 261
  - S Persei 230, 231
  - S Serpentis 4
  - s-Cepheids 185, 186
  - s-process elements 65, 69, 217
  - Saha equation 57, 79
  - SARV 216
  - Sawyer Hogg, Helen 172
  - Scaliger, Joseph Justus 11, 12
  - Schrödinger equation 95
  - Schwarzschild criterion 54
  - Schwarzschild discriminant 134
  - Schwarzschild, K. 54
  - Schwarzschild, M. 102
  - Schwerd, Friedrich Magnus 4
  - Schönberg–Chandrasekhar limit 61
  - Scorpius 7
  - Sculptor dwarf spheroidal 208
  - sdBV stars *see also* EC 14026 stars
    - V391 Pegasi 14
  - sdBV<sub>g</sub> stars *see* PG 1716+426 stars
  - sdBV<sub>p</sub> stars *see* EC 14026 stars
  - sdBV<sub>r</sub> stars *see* EC 14026 stars
  - sdBV<sub>i</sub> stars *see* PG 1716+426 stars
  - sdOV stars 109, 270
    - amplitudes 264
    - driving mechanism 267
    - EO Ceti 270
    - globular clusters
      - $\omega$  Cen 269–271, 273
      - NGC 2808 271, 273
    - instability strip 275
    - origin 271
    - periods 264
    - pulsation modes 264
    - SDSS J160043.6+074802.9 264
      - light curve 270, 271
    - V499 Ser 264, 271
      - He abundance 271
      - light curve 270, 271
      - nonlinear effects 270
      - pulsation modes 271
  - SDSS J000555.90-100213.5 291
  - SDSS J010415.99+144857.4 296
  - SDSS J023520.02-093456.3 296
  - SDSS J103655.39+652252.2 291
  - SDSS J111215.82+111745.0 296, 297
  - SDSS J142625.71+575218.3 291
  - SDSS J151824.11+065723.2 297
  - SDSS J160043.6+074802.9 264
    - light curve 270, 271
  - SDSS J161431.28+191219.4 297
  - SDSS J184037.78+642312.3 296, 297
  - SDSS J222859.93+362359.6 297
  - SDSS J234843.30-094245.3 280
  - second dredge-up 69
  - second-parameter problem 173
  - self-excitation 107, 125, 132
  - semi-regular variables 216–218, 221, 222, 229–232
    - $\alpha$  Herculis 4
    - $\alpha$  Orionis 4, 230
      - starspots 231
    - $\mu$  Cephei 4
    - Betelgeuse 4, 230
      - starspots 231
    - bulge 217
    - double-mode 229
    - first overtone 229
    - fundamental 229
    - light curves 227, 229, 230
    - LMC 217
    - multi-mode 232
    - period changes 231
    - periods 217
    - period–luminosity relations 229
    - second overtone 229
    - SRa type 216
    - SRb type 216
    - SRC type 216
      - $\alpha$  Orionis 230, 231
      - absolute magnitudes 231
      - Betelgeuse 230, 231
      - mass loss 230

- masses 230
- period–luminosity relation 231
- progenitors 230
- S Per 230, 231
- SRd type 216
- secondary periods 230
- triple-mode 229
- Z UMa 229, 230
- semiconvection 255
- Sextans A dwarf irregular 209
- SGB 44, 58, 61
- Shapley, Harlow 9, 197
- Si-burning 70
- Sloan Digital Sky Survey 26, 158
- Slowly Pulsating Blue Stars *see* SPB stars
- small frequency separation 146, 148, 151, 152
- Small Magellanic Cloud 184, 185, 200, 205, 208
- $\beta$  Cep stars 251
- SPB stars 251
- Smeyers, P. 258
- SN 1987A 49
- SN 2009ip 260
- SOHO 138, 142
- solar abundance problem 152, 153
- solar flares 130
- solar-like pulsators 50, 51, 125, 136, 148, 150, 233, 236, 242
- $\eta$  Bootis 125
- 16 Cygni A 148
- hot stars 126
- red giants 125, 138
- KIC 4350501 151
- KIC 5356201 151
- OSARs connection 230
- subgiants 125, 138
- KIC 6442183 140, 143
- Sonneberg Observatory 22
- sound
- waves 73, 130
- propagation timescale 74
- total internal reflection 147
- speed 73, 75, 134, 147, 152, 153
- increase with depth 147
- solar interior 153
- South Africa 208
- SPB stars 51, 52, 245, 248, 249, 251, 254
- 53 Per stars 251
- amplitudes 246
- asteroseismology
- challenges 245, 252
- Be stars 246
- driving mechanism 249, 251
- missing opacity 250
- fast rotating 248
- HD 170935 247
- instability strip 249, 250
- supergiant extension 252
- light curves 245
- Magellanic Clouds 251
- magnetic fields 249
- masses 251
- mode identification 245
- nonlinear effects 250
- periods 246, 251
- pulsation modes 246, 251
- rotation 251, 252
- SPBsg stars *see* SPBsg stars
- V469 Per 251
- SPBsg stars 252, 253
- $\iota$  CMa 254
- amplitudes 254, 277
- HD 141318 254
- HD 163899 253, 254
- HD 168183 254
- HD 54764 254
- HD 98410 254
- periods 254, 277
- pulsation modes 254, 277
- specific heat 56, 74, 80, 88, 100
- spectroscopy 35, 152, 162, 163, 168, 197, 203, 217, 245, 248, 268, 273, 287, 288, 294
- speed of sound 73
- spherical harmonics 135
- angular degree  $\ell$  135
- azimuthal order  $m$  135
- Spica 38
- Spitzer Space Telescope* 192, 214, 220, 227
- splitting
- magnetic 142
- rotational 140, 143
- spurious periods 18, 27
- stability coefficient 107, 112, 113, 117
- energy generation term 113
- energy transfer term 113
- stability conditions 105, 107, 108, 123
- growth rate 107, 116
- stability coefficient 107, 112, 117
- work integral 108, 110, 112, 284
- standard solar model 153
- starquakes 130
- neutron stars 302
- starspots 34, 36–38, 40
- Algol 36
- Betelgeuse 231
- BY Dra stars 37
- FK Com stars 38

- starspots (*contd.*)
  - HgMn stars 36
  - $\beta$  Lyr stars 36
  - RS CVn stars 36, 37
- Stebbins, Joel 9, 10
- Stefan–Boltzmann law 187, 189, 204
- stellar populations
  - Baade’s discovery 197
  - Cepheids 197
- Steward Observatory 267, 280
- stochastic driving *see* driving mechanisms
- strange modes 42, 50, 116, 122, 257, 258
- Strömgren photometry 16, 163, 204, 215
- STScI 225
- Sturm–Liouville equation 95, 96
  - general form 95
- SU Cygni 186, 187
- SU Ursae Majoris stars *see* cataclysmic variables
- subdwarfs
  - blue 64, 66, 116, 263, 264, 267–270, 272, 273, 275
  - O-type 263, 264, 267, 269–271
- Sun 13, 22, 34, 39, 49, 61, 97, 99, 125, 129, 130, 132, 134, 136, 138, 139, 142, 143, 145, 146, 149, 150, 164, 172, 183, 184, 192, 198, 199, 217, 286
  - 5-min oscillations 130
  - internal rotation profile 143–145
  - near-surface shear lane 144
  - ray diagrams 147
  - tachocline 144
- sunquakes 130
- sunspots 34
- super-AGB 69
- supergiant X-ray binaries 47
- superhumps 45
- supernovae 3, 4, 44, 48, 49
  - accretion-induced collapse 294
  - Cassiopeia 1
  - collapsars 49
  - core collapse 48
  - explosion mechanisms 49
  - distance scale 48
  - electron capture 294
  - failed 49
  - impostors 41
    - SN 2009ip 41, 260
    - UGC 2773-OT 260
  - Nobel Prize in Physics 48
  - nucleosynthesis 49
  - peculiar 49
  - SN 1572 1
  - SN 1987A 49
  - thermonuclear 48
  - Tycho’s 1
  - type I 49
  - type Ia 45, 49, 116
    - progenitors 48, 49, 116, 294
  - type Iax 49
  - type Ib 49
    - progenitors 49
  - type Ic 49
    - progenitors 49
  - type II 49
  - type IIb 49
  - type IIc 49
  - type IIL 49
  - type IIn 49
  - type IIP 49
- superoutbursts 45
- SuperWASP 26, 234
- surveys
  - 2MASS 16, 168, 221, 222, 235
  - ASAS 25, 249
  - CCD era 20
  - CRTS 26, 38, 168, 176
  - Edinburgh-Cape 8, 268
  - ESO Public 26, 159, 209
  - Gaia 8, 28
  - HATnet 38
  - IRSF/SIRIUS 227
  - LONEOS 26
  - LSST 8, 26, 33
  - microlensing 7
    - EROS 7
    - MACHO 7, 8, 25, 38, 221
    - OGLE 7, 25, 30, 38, 181, 188, 191, 193, 202, 203, 209, 210, 217, 221, 222, 239, 299
    - OGLE-III 25, 30, 181, 190
    - OGLE-IV 26
  - NSVS 15, 26
  - Palomar-Green 8
  - PTF 38
  - SDSS 26, 158, 181
  - SuperWASP 26
  - TrES 38
  - variability 7
  - VMC 209
  - VVV 8, 26, 159, 203
  - WASP 38
  - XO 38
- SW Sextantis stars *see* cataclysmic variables
- Sweigart, A. V. 58
- Swope, Henrietta 208
- SX Arietis stars 35
  - a Centauri 35

- SX Caelum 7
- SX Phoenixis stars 51, 52, 77, 98, 100, 120, 233, 234, 236–239, 299
- 2MASS 06451725+4122158 235
  - ages 234, 238
  - amplitudes 234, 238
  - binary progenitors 236
  - blue stragglers connection 236
  - color curves 235
  - color-magnitude diagram 233, 238
  - double-radial pulsators 238
  - driving mechanism 242
  - evolution 236
  - extragalactic 236, 238
  - field 237
  - globular clusters 238, 239
  - instability strip 233, 238
  - J0247-25A 299
  - light curves 235
  - metallicity 234
  - mode identification 238
  - non-radial 238
  - periods 234
  - period–luminosity relation 205, 237, 239
    - theoretical 239
  - Population II 234
  - pulsation modes 234, 237
  - relation to  $\delta$  Scuti stars 233, 234, 237
  - relation to HADS 236
  - SX Phe 77, 234, 239
    - mass 77
    - mean density 77
    - period 77, 100
    - radius 77
- symbiotic novae 48
- symbiotic stars 44, 47, 48
- classification 48
  - Z Andromedae 47, 48
- t**
- T Tauri stars 39–41
- accreting 40
  - classification 40
  - CTTS 40
  - Herbig-Haro nebulosity 41
  - PTTS 40
  - rotational modulation 40
  - WTTS 40
- T Ursae Minoris 228
- tachocline 144, 152
- Templeton, M. 228
- TESS 28
- thermodynamic engine 78, 113
- valve mechanism 113, 114
- thermonuclear reactions 53, 55, 56, 114
- third dredge-up 69, 220
- tidally excited pulsations 129
- time
- Ephemeris 13
  - International Atomic 13
  - light-travel time effect 14
  - Universal 12, 13
- timescales
- dynamical 78, 79, 218
  - free fall 96
  - Kelvin-Helmholtz 78, 88, 89, 195, 229
  - nuclear 60, 78, 79
  - perturbation damping 107
  - perturbation growth 107
  - pulsational 79, 82, 88
  - thermal 61, 88, 242
- torsion balance
- oscillation period 75
- total internal reflection 147
- TP-AGB 65, 69
- transition zone 123
- TrES 38
- Tsesevich, V. P. 21
- turbulence 78, 125, 215, 218
- turn-off point 61, 62, 68, 211, 220, 250
- HADS 236
- TW Lyncis 114
- TX Equulei 7
- TYC 1031 1252 1 211
- Tycho's supernova 1
- Type II Cepheids *see* Cepheids
- u**
- U Geminorum stars 45
- UGC 2773-OT 260
- Universal Time 13
- UV Ceti stars 39
- UVES 296
- UX Ursae Majoris 46
- UXor stars 41
- UX Orionis 41
- v**
- V1093 Herculis stars *see* PG 1716+426 stars
- V1154 Cyg 189
- V1449 Aquilae 245–247
- V2076 Ophiuchi stars 256
- V2076 Oph 256
- V338 Serpentii stars
- GALEX J201337.6+092801 269
  - V338 Ser 269
- V361 Hydrae stars *see* EC 14026 stars

- V391 Pegasi (*contd.*)
- V391 Pegasi 14
- V411 Tauri stars
  - V411 Tau 279
  - ZZ Cet 279
- V4152 Sagittarii 256
- V445 Lyrae 171
- V455 Andromedae 300
- V469 Persei 251
- V499 Serpentis stars *see* sdOV stars
- V585 Pegasi stars 264
  - Balloon 090100001 265
  - HS 0702+6043 267
  - V585 Peg 265
- V645 Centauri 37
- V652 Hercules stars *see* PV Telescopii stars
- V777 Herculis stars *see* DBV stars
- V817 Herculis 282
- variability classes 30
- variability tree 30
- variability types 29
- virial theorem 75, 89
- viscosity 78, 218
  - turbulent 219
- Vista Survey of the Magellanic Clouds 209
- Vista Variables in the Vía Láctea 8, 26, 159, 203
- VLBI 221
- VLT 296
- VSX 22, 32, 245, 246, 251, 253, 256
- VY Sculptoris stars 46
  
- w**
- W UMa stars 32, 35–38, 130
  - ι Bootis 4
  - spotted 36
  - starspots 36
- W Virginis stars *see* Cepheids
- Washington photometry 204
- WASP 38
- waves
  - buoyancy 136
  - gravity 125, 147
  - prograde 143
  - retrograde 142
  - sound 73, 130, 136, 147
    - propagation timescale 74
  - total internal reflection 147
- WD 1017-138 296, 298
- Wesenheit index 191, 205, 209, 221
- White dwarfs
  - $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$  reaction 283
  - convection zones 284
  - cooling rates 282, 283
    - axions 283
    - fundamental physics 283, 290
    - neutrinos 283
    - WIMPs 283
  - cooling tracks 50, 275, 282, 285, 293, 295
  - crystallization 282, 294, 295
    - globular clusters 294
  - DB gap 296, 298
  - pulsating 51, 77, 275
    - asteroseismology 275
    - DAVs 276–279, 285, 287, 292–294, 298
    - DBVs 275–282, 284, 287–293, 298
    - DOVs 276–278, 285
    - DQVs 275–278, 280, 290–292
    - EHM-DAVs 294
    - ELM-DAVs 275–277, 293, 294, 296, 297
    - ELM-HeV 276, 277, 298, 299
    - GW Librae stars 276, 277, 300, 301
    - GW Vir stars 276, 277, 282, 285, 286, 288, 293
    - hot DAVs 277, 296, 298
    - instability strip 275, 276
    - light curves 275
    - PNNV stars 277, 285
    - ZZ Ceti stars 6, 77, 275, 277, 279–284, 292–296
  - pulsation models
    - realistic 290
  - rotation 294
  - spectral classification 276
    - DAs 276
    - DBs 276
    - DCs 276
    - DOs 276
    - DQs 276
    - hybrids 276
- Whole Earth Telescope 27, 278, 286, 288, 289
- Wichita State University 87
- WIRE 27
- WISE 160, 168
- Wolf-Rayet stars 41, 42, 71, 122, 258, 261, 287
  - colliding-wind systems 42
  - pulsation 42, 261
  - strange modes
    - mass loss 261
  - WR 123 122
- Wood diagram 221, 222
- Wood, Peter R. 221
- Work integral 108, 110, 112, 284
- World War II 24, 29, 208
- WTTS 40

**x**

- X-ray binaries
  - Be/X-ray 47
  - high-mass 47
  - intermediate-mass 47
  - low-mass 47
  - supergiant 47
- XO 38
- XX Trianguli 37
- XX Virginis 203
  - metallicity 204
- XZ Cygni 178

**z**

- Z Andromedae stars 47
- Z Camelopardalis stars 45
- Z Ursae Majoris 229, 230
- ZAHB 50, 63, 64, 66, 102, 177
- ZAMS 50, 58, 60, 61, 67, 102, 238, 263
- Zhevakin, S. A. 119
- ZNG 1 268
- ZZ Ceti stars *see* DAV stars
- ZZ Leporis stars 286
  - mass loss 287
  - pulsations 287
  - rotation 287
  - temperatures 286
  - UV observations 287

**References index**

- Abernathy *et al.* (2011) 304, 311
- Abt (1957) 253, 311
- Acerbi, Barani & Martignoni (2011) 38, 311
- Aerts (1996) 150, 311
- Aerts (2006) 252, 311
- Aerts & De Cat (2003) 311
- Aerts & Kolenberg (2005) 248, 311
- Aerts & Waelkens (1995) 252, 312
- Aerts *et al.* (1994) 249, 311
- Aerts *et al.* (2010b) 261, 311
- Aerts *et al.* (2011) 122, 127, 245, 246, 251, 311
- Aerts *et al.* (2013) 253, 312
- Aerts *et al.* (2014) 126, 245, 311
- Aerts, Christensen-Dalsgaard & Kurtz (2010a) 11, 13, 131, 132, 143, 150, 152, 248, 263, 275, 287, 311
- Aerts, De Pauw & Waelkens (1992) 150, 311
- Africano (1977) 251, 312
- Ahmad & Jeffery (2005) 272, 273, 312
- Aikawa & Antonello (2000) 154, 312
- Aizenman, Smeyers & Weigert (1977) 139, 312
- Alard (2000) 312
- Albrecht (1909) 248, 312
- Alcock *et al.* (2000) 159, 160, 312
- Alcock *et al.* (2001) 42, 312
- Alcock *et al.* (2003) 25, 312
- Alecian *et al.* (2009) 36, 312
- Alekseev (2000) 37, 312
- Althaus *et al.* (2008a) 286, 312
- Althaus *et al.* (2008b) 286, 312
- Althaus *et al.* (2010) 116, 149, 275, 288, 292, 312
- Andersen (1991) 30, 312
- Andersson (1998) 302, 312
- Andersson & Kokkotas (1998) 82, 313
- Andersson & Kokkotas (2001) 303, 313
- Andersson *et al.* (2011) 304, 313
- Ando (1986) 44, 313
- Andreasen (1988) 121, 313
- Andreasen & Petersen (1988) 121, 313
- Angel (1978) 46, 313
- Angulo *et al.* (1999) 87, 313
- Antia & Basu (2011) 152, 313
- Antoci (2014) 248, 313
- Antoci *et al.* (2011) 126, 242, 313
- Antoci *et al.* (2013b) 127, 313
- Antoci, Cunha & Houdek (2013a) 242, 313
- Anupama (2008) 48, 313
- Anupama (2013) 46, 313
- Appenzeller (1970) 116, 313
- Appenzeller & Mundt (1989) 40, 313
- Appourchaux (2003) 150, 313
- Appourchaux (2014) 127, 150, 313
- Appourchaux *et al.* (2010) 136, 152, 314
- Arbutina (2009) 38, 314
- Arentoft *et al.* (2007) 239, 314
- Arfken & Weber (2001) 135, 314
- Argelander (1843) 5, 314
- Argelander (1844) 314
- Argelander (1855) 5, 314
- Armstrong *et al.* (2001) 74, 314
- Arnett (1996) 48, 49, 314
- Arp (1955) 205, 314
- Arras, Townsley & Bildsten (2006) 300, 314
- Artemenko, Grankin & Petrov (2012) 40, 314
- Asplund *et al.* (2009) 152, 314
- Asplund, Grevesse & Sauval (2005) 152, 153, 314
- Atkinson (1931) 53, 314
- Austin *et al.* (2011) 36, 314
- Axel & Perkins (1971) 95, 314
- Bélopolski (1895) 8, 73, 318
- Baade (1926) 187, 314
- Baade (1944) 197, 314
- Baade (1956) 181, 197, 198, 314
- Baade (2000) 248, 314

- Baade & Balona (1994) (*contd.*)  
 Baade & Balona (1994) 44, 314  
 Baade & Hubble (1939) 208, 315  
 Baade & Swope (1961) 208, 315  
 Badnell *et al.* (2005) 87, 315  
 Baglin *et al.* (1973) 236, 315  
 Bahcall (1999) 131, 315  
 Bahcall, Pinsonneault & Basu (2001) 61, 315  
 Bahcall, Pinsonneault & Wasserburg (1995) 61, 315  
 Bailes, Lyne & Shemar (1991) 13, 315  
 Bailey (1902) 22, 157, 315  
 Bailey & Pickering (1913) 157, 315  
 Baird (1996) 162, 315  
 Baker & Kippenhahn (1962) 112, 119, 123, 315  
 Bakich (1995) 6, 315  
 Baldwin & Samolyk (2003) 178, 315  
 Ballot *et al.* (2012) 144, 315  
 Balmforth *et al.* (2001) 242, 315  
 Balona (1986) 150, 315  
 Balona (1990) 43, 248, 315  
 Balona (1995) 248, 251, 315  
 Balona (2000) 248, 315  
 Balona (2009) 44, 315  
 Balona (2013) 44, 315  
 Balona (2014) 124, 240, 315  
 Balona & Dziembowski (1999) 246, 316  
 Balona & Dziembowski (2011) 241, 316  
 Balona & Kambe (1999) 246, 316  
 Balona & Nemec (2012) 236, 237, 316  
 Balona *et al.* (2011a) 233, 242, 244, 316  
 Balona *et al.* (2011b) 241, 316  
 Balona *et al.* (2011c) 36, 44, 250, 316  
 Balona *et al.* (2012) 127, 233, 240, 242, 315  
 Balona *et al.* (2013) 244, 316  
 Baraffe, Chabrier & Barman (2010) 129, 316  
 Baraffe, Heger & Woosley (2001) 115, 316  
 Baraffe, Heger & Woosley (2004) 116, 316  
 Baran (2012) 263, 268, 316  
 Baran & Østensen (2013) 268, 270, 316  
 Baran *et al.* (2005) 265, 316  
 Baran *et al.* (2011a) 265, 316  
 Baran *et al.* (2011b) 316  
 Baran *et al.* (2012) 268, 316  
 Barden (1985) 37, 317  
 Barlow *et al.* (2008) 290, 317  
 Barnes (2012) 187, 317  
 Barnes & Evans (1976) 225, 317  
 Barnes *et al.* (2004) 36, 317  
 Basu & Antia (2013) 152, 317  
 Batalha *et al.* (2013) 33, 317  
 Batten (2005) 30, 317  
 Baug & Chandrasekhar (2012) 225, 317  
 Bayer (1603) 5, 317  
 Beauchamp *et al.* (1999) 287, 317  
 Beck *et al.* (2012a) 143, 317  
 Beck *et al.* (2012b) 138, 143, 317  
 Becker (1998) 216, 317  
 Becker & Strohmeier (1940) 187, 317  
 Bedding (2012) 140, 318  
 Bedding & Kjeldsen (2010) 150, 318  
 Bedding *et al.* (2010) 125, 138, 151, 318  
 Bedding *et al.* (2011) 149, 318  
 Beech (1985) 38, 318  
 Belkacem *et al.* (2008) 125, 318  
 Belkacem *et al.* (2009) 126, 246, 318  
 Bellini *et al.* (2013) 167, 318  
 Belokurov (2013) 181, 318  
 Benedict *et al.* (2007) 192, 318  
 Benedict *et al.* (2011) 166, 205, 318  
 Benkő *et al.* (2010) 170, 318  
 Benomar *et al.* (2013) 125, 140, 143, 319  
 Benz & Güdel (2010) 39, 319  
 Bergeat, Knapik & Rutily (2002) 71, 319  
 Bergeron *et al.* (2004) 292, 319  
 Bergeron *et al.* (2011) 287, 319  
 Bertelli *et al.* (2009) 69–71, 319  
 Bertelli, Bressan & Chiosi (1985) 69, 319  
 Berti, Cardoso & Starinets (2009) 304, 319  
 Bertout (1984) 40, 319  
 Bessell (2005) 16, 319  
 Bethe (1939) 53, 319  
 Bethe (1990) 49, 319  
 Bethe & Marshak (1939) 53, 319  
 Bethe & Wilson (1985) 49, 319  
 Bhatnagar & Kothari (1944) 154, 319  
 Bigot & Kurtz (2011) 243, 319  
 Bildsten *et al.* (2012) 149, 319  
 Binnendijk (1960) 13, 319  
 Binnendijk (1970) 32, 36, 319  
 Bionta *et al.* (1987) 49, 319  
 Bird, Stanek & Prieto (2009) 70, 319  
 Bischoff-Kim & Østensen (2011) 275, 283, 288, 290, 291, 319  
 Bischoff-Kim, Montgomery & Winget (2008) 77, 319  
 Blažko (1907) 155, 160, 170, 240, 241, 320  
 Blanton & Roweis (2007) 16, 320  
 Blomme *et al.* (2011) 127, 320  
 Blum *et al.* (2006) 220, 320  
 Bode (2013) 46, 320  
 Bode & Evans (2012) 45, 320  
 Bodenheimer (1992) 58, 59, 320  
 Bognár *et al.* (2009) 281, 320  
 Bohlender, Rice & Hechler (2010) 35, 320  
 Bond (1989) 33, 320  
 Bond *et al.* (1984) 282, 320

- Bonnell *et al.* (1982) 158, 320  
 Bono & Stellingwerf (1994) 154, 321  
 Bono *et al.* (1996) 168, 169, 320  
 Bono *et al.* (1999a) 123, 154, 320  
 Bono *et al.* (2000a) 69, 320  
 Bono *et al.* (2003) 102, 320  
 Bono, Caputo & Castellani (2006) 193, 320  
 Bono, Caputo & Di Criscienzo (2007) 164, 167, 321  
 Bono, Caputo & Santolamazza (1997) 168, 206, 207, 321  
 Bono, Caputo & Stellingwerf (1994) 177, 321  
 Bono, Castellani & Marconi (2000b) 154, 321  
 Bono, Marconi & Stellingwerf (1999) 108, 321  
 Bono, Marconi & Stellingwerf (2000) 188, 321  
 Bopp (1987) 37, 321  
 Bopp & Fekel (1977) 37, 321  
 Bopp & Stencel (1981) 35, 38, 321  
 Borissova, Ivanov & Catelan (2000) 204, 321  
 Borucki & Koch (2011) 27, 321  
 Bouabid *et al.* (2013) 241, 321  
 Bours, Toonen & Nelemans (2013) 49, 321  
 Bowen (1990) 225, 321  
 Boyer *et al.* (2012) 220, 321  
 Bradley & Dziembowski (1996) 121, 321  
 Bragaglia *et al.* (2001) 102, 169, 321  
 Brassard & Fontaine (2005) 294, 321  
 Brassard, Fontaine & Wesemael (1995) 288, 321  
 Breger (1979) 233, 236, 321  
 Breger (2000) 233, 236, 322  
 Breger (2010) 240, 322  
 Breger *et al.* (2004) 240, 322  
 Breger *et al.* (2011) 234, 322  
 Bresolin *et al.* (2004) 259, 322  
 Bressan *et al.* (2012) 66, 68, 322  
 Breton *et al.* (2012) 39, 322  
 Brickhill (1991a) 281, 322  
 Brickhill (1991b) 281, 322  
 Brickhill (1992) 288, 322  
 Briquet & Aerts (2003) 150, 322  
 Briquet *et al.* (2009) 245, 322  
 Briquet *et al.* (2013) 249, 322  
 Brocato *et al.* (1990) 66, 322  
 Brown & Gilliland (1994) 131, 322  
 Brown *et al.* (1991) 149, 322  
 Brown *et al.* (2001) 58, 323  
 Brown *et al.* (2013) 269, 271, 273, 322  
 Browne (2005) 159, 323  
 Browning, Brun & Toomre (2004) 126, 323  
 Brun, Miesch & Toomre (2011) 125, 323  
 Brunt (1913) 9, 323  
 Brunt (1927) 134, 323  
 Bruntt (2007) 28, 323  
 Bruntt (2009) 152, 323  
 Buchler & Kolláth (2011) 156, 171, 323  
 Buchler & Kovács (1987) 212, 323  
 Buchler & Moskalik (1992) 155, 202, 323  
 Buchler *et al.* (1996) 212, 323  
 Buchler, Goupil & Hansen (1997) 156, 323  
 Buchler, Moskalik & Kovács (1990) 154, 323  
 Budding & Zeilik (1987) 37, 323  
 Burkart *et al.* (2012) 129, 323  
 Burrows (2013) 49, 323  
 Busso *et al.* (2007) 167, 323  
 Busso, Gallino & Wasserburg (1999) 69, 323  
 Butkov (1968) 95, 323  
 Butler (1975) 162, 163, 323  
 Buzasi *et al.* (2000) 28, 324  
 Buzasi *et al.* (2005) 233, 323  
 Córscico & Althaus (2006) 137, 138, 330  
 Córscico *et al.* (2009a) 282, 283, 285, 330  
 Córscico *et al.* (2009b) 282, 330  
 Córscico *et al.* (2011) 143, 330  
 Córscico *et al.* (2012a) 288, 290, 330  
 Córscico *et al.* (2012b) 283, 330  
 Córscico *et al.* (2012c) 149, 330  
 Córscico *et al.* (2013a) 283, 330  
 Córscico, Althaus & Romero (2013b) 276, 296, 330  
 Cacciari, Corwin & Carney (2005) 173, 324  
 Caloi & D'Antona (2007) 167, 324  
 Cameron (1965) 302, 324  
 Campbell (1955) 228, 324  
 Campbell (1986) 38, 324  
 Campbell & Jacchia (1941) 23, 24, 324  
 Cannon (1912) 6, 324  
 Cantiello *et al.* (2009) 126, 324  
 Caputo *et al.* (2004) 209, 324  
 Caputo *et al.* (2005) 192, 194, 324  
 Cardelli (1989) 214, 324  
 Cassisi *et al.* (2001) 65, 324  
 Cassisi, Salaris & Bono (2002) 62, 324  
 Castanheira *et al.* (2007) 292, 324  
 Castanheira *et al.* (2010) 292, 324  
 Castelaz *et al.* (2000) 217, 324  
 Castellani (1983) 324  
 Catala (2003) 236, 324  
 Catelan (2004a) 157, 324  
 Catelan (2004b) 160, 173, 324  
 Catelan (2007) 55, 57, 58, 60, 324  
 Catelan (2009a) 64, 104, 166, 167, 173, 174, 177, 180, 181, 204, 263, 325  
 Catelan (2009b) 268, 325  
 Catelan (2009c) 175, 325  
 Catelan (2013) 58, 152, 153, 325

- Catelan & Cortés (2008) (*contd.*)  
 Catelan & Cortés (2008) 166, 325  
 Catelan *et al.* (2006) 167, 325  
 Catelan *et al.* (2011) 8, 26, 325  
 Catelan *et al.* (2013) 8, 26, 159, 203, 325  
 Catelan, Pritzl & Smith (2004) 164, 165, 325  
 Cebon *et al.* (2012) 129, 325  
 Ceillier *et al.* (2013) 125, 325  
 Chabrier & Baraffe (2000) 47, 325  
 Chadid & Preston (2013) 168, 325  
 Chadid *et al.* (2004) 171, 326  
 Chadid *et al.* (2010) 27, 325  
 Chambers (1865) 7, 326  
 Chandler (1888) 6, 326  
 Chandler (1896) 21, 326  
 Chandrasekhar (1939) 55, 99, 326  
 Chang *et al.* (2013) 233, 234, 296, 326  
 Chanmugam (1972) 279, 326  
 Chanmugam (1992) 45, 326  
 Chapellier & Mathias (2013) 137, 326  
 Chapellier *et al.* (1998) 251, 326  
 Chapellier *et al.* (2012) 137, 326  
 Chaplin & Miglio (2013) 125, 131, 148, 149, 152, 326  
 Chaplin *et al.* (2011) 28, 326  
 Chaplin *et al.* (2014) 152, 326  
 Charbonneau *et al.* (1999) 152, 326  
 Charbonneau *et al.* (2000) 33, 326  
 Charbonnel (2005) 62, 327  
 Charpinet *et al.* (1996) 109, 266, 267, 269, 327  
 Charpinet *et al.* (1997) 267, 327  
 Charpinet *et al.* (2005) 268, 327  
 Charpinet *et al.* (2006) 268, 327  
 Charpinet *et al.* (2007) 263, 327  
 Charpinet *et al.* (2008) 268, 327  
 Charpinet *et al.* (2010) 268, 327  
 Charpinet *et al.* (2011) 263, 265, 266, 268, 327  
 Charpinet *et al.* (2013a) 265, 268, 327  
 Charpinet *et al.* (2013b) 263, 267, 269, 327  
 Charpinet, Fontaine & Brassard (2001) 267, 327  
 Charpinet, Fontaine & Brassard (2009a) 268, 327  
 Charpinet, Fontaine & Brassard (2009b) 143, 327  
 Chaty (2011) 47, 327  
 Chené & Moffat (2011) 42, 328  
 Chené *et al.* (2011) 42, 122, 328  
 Chevalier (1971) 242, 328  
 Chevalier (1990) 49, 328  
 Chiosi & Maeder (1986) 67, 328  
 Christensen-Dalsgaard (1980) 139, 328  
 Christensen-Dalsgaard (1981) 139, 328  
 Christensen-Dalsgaard (1984) 132, 328  
 Christensen-Dalsgaard (1988) 148, 328  
 Christensen-Dalsgaard (2002) 131, 150, 328  
 Christensen-Dalsgaard (2004) 138, 328  
 Christensen-Dalsgaard (2012) 152, 328  
 Christensen-Dalsgaard & Kjeldsen (2004) 130, 328  
 Christensen-Dalsgaard & Mullan (1994) 82, 132, 328  
 Christensen-Dalsgaard & Thompson (2011) 131, 328  
 Christensen-Dalsgaard *et al.* (2007) 28, 328  
 Christensen-Dalsgaard, Gough & Libbrecht (1989) 127, 328  
 Christianson (1983) 207, 328  
 Christy (1964) 108–110, 154, 328  
 Christy (1966) 74, 168, 328  
 Christy (1967) 95, 98, 328  
 Christy (1968) 108–110, 328  
 Clayton (1968) 54, 55, 58, 87, 328  
 Clayton (1996) 42, 328  
 Clayton (2012a) 42, 43, 328  
 Clayton (2012b) 42, 43, 329  
 Clayton *et al.* (2007) 43, 329  
 Clemens & Rosen (2004) 302, 329  
 Clement (1981) 82, 329  
 Clement & Goranskij (1999) 178, 329  
 Clement & Shelton (1997) 163, 329  
 Clement *et al.* (2001) 160, 172–174, 197, 199, 200, 204, 206, 209, 217, 329  
 Clement, Hogg & Yee (1988) 207, 329  
 Clementini *et al.* (1995) 102, 329  
 Clementini *et al.* (2004) 169, 329  
 Clementini *et al.* (2009) 181, 329  
 Clementini, Tosi & Merighi (1991) 162, 329  
 Clerke (1903) 8, 329  
 Cohen & Sarajedini (2012) 233, 238, 239, 329  
 Cohen, Wheaton & Megeath (2003) 16, 329  
 Coleiro & Chaty (2013) 47, 329  
 Colgate & McKee (1969) 48, 329  
 Colgate & White (1966) 49, 329  
 Collins (1987) 43, 329  
 Conti (1975) 71, 329  
 Contreras *et al.* (2010) 173, 329  
 Contreras Ramos *et al.* (2013) 181, 330  
 Coppola *et al.* (2013) 209, 330  
 Corbard *et al.* (2013b) 144, 330  
 Corbard, Salabert & Boumier (2013a) 145, 330  
 Corcoran *et al.* (2011) 42, 330  
 Cortés & Catelan (2008) 102, 331  
 Costa & Kepler (2008) 286, 331  
 Costa *et al.* (2008) 286, 331

- Cousens (1983) 171, 331  
 Coutts Clement & Sawyer Hogg (1977) 207, 331  
 Cowling (1934) 114, 331  
 Cowling (1935) 114, 331  
 Cowling (1941) 129, 130, 132, 331  
 Cox (1955) 107, 114, 331  
 Cox (1960) 119, 331  
 Cox (1963) 112, 119, 123, 332  
 Cox (1967) 78, 96, 107, 112, 113, 123, 332  
 Cox (1974) 78, 84, 120, 153, 332  
 Cox (1980) 81, 98, 107, 111, 119, 131, 132, 153, 332  
 Cox (1991) 121, 331  
 Cox (1998) 179, 331  
 Cox (2003) 121, 331  
 Cox (2013) 171, 331  
 Cox & Giuli (1968) 55, 80, 81, 88, 100, 332  
 Cox & Ostlie (1993) 218, 331  
 Cox & Tabor (1976) 121, 331  
 Cox & Whitney (1958) 10, 119, 332  
 Cox *et al.* (1966) 119, 332  
 Cox *et al.* (1977) 282, 331  
 Cox *et al.* (1980) 332  
 Cox *et al.* (1992) 121, 331  
 Cox, Hodson & King (1979) 234, 331  
 Cranmer (2009) 44, 332  
 Crause, Lawson & Henden (2007) 42, 332  
 Crowther (2007) 41, 42, 70, 332  
 Crump (1916) 248, 332  
 Cunha (2002) 242, 244, 332  
 Cunha (2007) 242, 244, 332  
 Cunha *et al.* (2007) 131, 147, 152, 332  
 Cunha *et al.* (2013) 242, 244, 332  
 Cuntz, Saar & Musielak (2000) 33, 332  
 Dal & Evren (2012) 39, 332  
 Dalessio *et al.* (2013) 282, 332  
 Dall'Ora *et al.* (2004) 166, 332  
 Darnley *et al.* (2012) 44, 332  
 Daszyńska-Daszkiewicz & Walczak (2009) 156, 333  
 Daszyńska-Daszkiewicz & Walczak (2010) 251, 333  
 Daszyńska-Daszkiewicz, Ostrowski & Pamyatnykh (2013a) 255, 332  
 Daszyńska-Daszkiewicz, Szewczuk & Walczak (2013b) 250, 251, 333  
 Davis (1957) 3, 333  
 Davis (1970) 27, 333  
 Davis *et al.* (2008) 47, 333  
 de Boer (1985) 66, 333  
 de Boer & Maintz (2010) 114, 115, 333  
 De Cat (2003) 333  
 De Cat (2007) 245, 251, 333  
 De Cat *et al.* (2007) 248, 252, 333  
 de Groot, van Genderen & Sterken (1997) 261, 333  
 De Lee (2008) 158, 334  
 De Ridder *et al.* (2009) 125, 335  
 de Vaucouleurs (1952) 4, 335  
 Debosscher *et al.* (2013) 236, 245, 333  
 Degroote (2010) 133, 333  
 Degroote (2013) 127, 156, 246, 333  
 Degroote *et al.* (2009) 156, 246, 334  
 Degroote *et al.* (2010a) 245, 334  
 Degroote *et al.* (2010b) 126, 149, 334  
 Degroote *et al.* (2011) 247, 251, 333  
 Degroote *et al.* (2012) 245, 334  
 Deheuvels & Michel (2010) 139, 334  
 Deheuvels & Michel (2011) 137, 139, 334  
 Deheuvels *et al.* (2012) 138, 143, 334  
 Deheuvels *et al.* (2014) 143, 334  
 Dehner & Kawaler (1995) 290, 291, 334  
 Della Valle (2010) 49, 334  
 Demaret (1974) 96, 334  
 Demaret (1976) 107, 334  
 Demaret & Perdang (1977) 107, 334  
 Demarque & Hirshfeld (1975) 210, 334  
 Demarque *et al.* (2000) 165, 335  
 Demarque, Sarajedini & Guo (1994) 68, 335  
 Deng & Xiong (2001) 249, 335  
 Denissenkov & VandenBerg (2003) 62, 335  
 Derekas, Kiss & Bedding (2007) 30, 335  
 Dessart *et al.* (2012) 49, 335  
 Detre & Szeidl (1973) 171, 335  
 Deubner & Gough (1984) 131, 149, 335  
 Deupree (1974) 154, 335  
 Dhillon, Smith & Marsh (2013) 46, 47, 335  
 Di Mauro *et al.* (2011) 140, 335  
 Diago *et al.* (2008) 251, 335  
 Diethelm (1990) 200, 335  
 Diethelm (1996) 207, 335  
 Dimmelmeier, Stergioulas & Font (2006) 82, 335  
 Dixon, Brown & Landsman (2004) 268, 335  
 Doi *et al.* (2010) 16, 335  
 Dolez & Vauclair (1981) 280, 335  
 Donati *et al.* (2001) 249, 336  
 Donea (2011) 130, 336  
 Donea & Lindsey (2005) 130, 336  
 Dorfi, Gautschy & Saio (2006) 261, 336  
 Dorman, O'Connell & Rood (1995) 66, 336  
 Dorman, Rood & O'Connell (1993) 66, 336  
 Dotter *et al.* (2008) 82, 336  
 Downes *et al.* (2004) 158, 336  
 Drake *et al.* (2009) 26, 38, 336  
 Drake *et al.* (2010) 33, 336  
 Drake *et al.* (2012) 26, 336

- Drake *et al.* (2013) (*contd.*)  
 Drake *et al.* (2013) 164, 174, 176, 336  
 Drilling *et al.* (2013) 263, 336  
 Dufour *et al.* (2008a) 291, 292, 336  
 Dufour *et al.* (2008b) 291, 336  
 Dufour *et al.* (2009) 280, 290, 336  
 Dufour *et al.* (2011) 275, 290, 336  
 Duncan (1998) 130, 302, 336  
 Dunham *et al.* (2012) 39, 337  
 Dunlap, Barlow & Clemens (2010) 275, 290, 337  
 Dupret *et al.* (2003) 150, 337  
 Dupret *et al.* (2004) 124, 242, 337  
 Dupret *et al.* (2005) 124, 241–243, 337  
 Dupret *et al.* (2007) 124, 337  
 Duvall *et al.* (1993) 127, 337  
 Dworetsky (1983) 17, 337  
 Dziembowski (1995) 248, 337  
 Dziembowski (2007) 251, 337  
 Dziembowski (2009) 121, 337  
 Dziembowski & Kubiak (1981) 121, 281, 337  
 Dziembowski & Pamyatnykh (1993) 121, 337  
 Dziembowski & Pamyatnykh (2008) 122, 251, 337  
 Dziembowski & Sławińska (2005) 261, 337  
 Dziembowski *et al.* (2001) 138, 337  
 Dziembowski, Moskalik & Pamyatnykh (1993) 251, 337  
 Eaton & Hall (1979) 37, 337  
 Eckart (1960) 134, 337  
 Eddington (1918a) 10, 90, 92, 94, 337  
 Eddington (1918b) 194, 337  
 Eddington (1919a) 10, 107, 154, 337  
 Eddington (1919b) 195, 337  
 Eddington (1926) 55, 78, 99, 107, 113, 117, 337  
 Eddington & Plakidis (1929) 228, 338  
 Eggen (1977) 216, 338  
 Eggen & Sandage (1964) 68, 338  
 Eisenstein *et al.* (2006) 276, 338  
 Eislöffel & Ray (1994) 41, 338  
 Ekström *et al.* (2012) 66, 67, 69–71, 338  
 Ekström *et al.* (2013) 71, 338  
 Elkin *et al.* (2005) 244, 338  
 Elkin *et al.* (2011) 35, 338  
 Elmegreen (2000) 116, 338  
 Emden (1907) 10, 55, 73, 99, 130, 132, 338  
 Engle *et al.* (2014) 196, 338  
 Escobar *et al.* (2012) 152, 338  
 Esquivel *et al.* (2010) 226, 338  
 Evans *et al.* (2008) 195, 338  
 Evans *et al.* (2014) 189, 338  
 Eyer (2006) 28, 338  
 Eyer & Cuypers (2000) 28, 339  
 Eyer & Mowlavi (2008) 31, 339  
 Eze (2011) 48, 339  
 Fadeyev (2008a) 108, 116, 261, 339  
 Fadeyev (2008b) 154, 339  
 Fadeyev (2010) 261, 339  
 Fadeyev (2012) 154, 339  
 Fadeyev (2013) 195, 339  
 Farihi *et al.* (2012) 282, 339  
 Fauvaud *et al.* (2006) 235, 339  
 Fauvaud *et al.* (2010) 237, 339  
 Feast (1975) 42, 339  
 Feast (2009) 71, 339  
 Feast (2011) 205, 339  
 Feast & Whitelock (2000) 220, 339  
 Feast *et al.* (2008) 166, 339  
 Ferguson *et al.* (2005) 87, 339  
 Fernie (1969) 185, 197, 340  
 Fernie (1992) 239, 340  
 Fernie (1995) 240, 340  
 Fernie *et al.* (1995) 74, 340  
 Ferrario *et al.* (2009) 35, 340  
 Ferraz-Mello (1981) 17, 340  
 Feuchtinger (1999) 154, 155, 340  
 Feuchtinger Buchler & Kolláth (2000) 154, 340  
 Filippenko (1997) 49, 340  
 Finkenzeller & Mundt (1984) 41, 340  
 Finzi (1965) 302, 340  
 Fiorentino & Monelli (2012) 210, 340  
 Fiorentino *et al.* (2012) 71, 340  
 Fitch (1973) 280, 340  
 Fletcher *et al.* (2011) 130, 340  
 Fokin (1994) 212, 340  
 Foley *et al.* (2013) 49, 340  
 Fontaine & Brassard (2008) 263, 275, 283, 284, 340  
 Fontaine *et al.* (1982) 292, 341  
 Fontaine *et al.* (2003) 263, 267, 270, 340  
 Fontaine *et al.* (2004) 270, 341  
 Fontaine *et al.* (2006) 270, 341  
 Fontaine *et al.* (2008b) 267, 341  
 Fontaine *et al.* (2009) 275, 282, 341  
 Fontaine *et al.* (2012) 268, 340  
 Fontaine *et al.* (2013) 275, 340  
 Fontaine, Brassard & Dufour (2008a) 282, 290, 341  
 For, Sneden & Preston (2011) 163, 341  
 Foster (1995) 17, 341  
 Foster (1996) 17, 341  
 Foster (2010) 15, 17, 18, 341  
 Fouqué *et al.* (2007) 192, 341  
 Fowler & Hoyle (1964) 49, 341  
 Fox & Wood (1982) 218, 341  
 Frandsen *et al.* (2002) 125, 215, 341

- Frank, King & Raine (2002) 45, 341  
 Freedman *et al.* (2011) 192, 341  
 Freire & Tauris (2014) 294, 341  
 French (2012) 3, 184, 341  
 Friedman & Morsink (1998) 302, 341  
 Frolov & Irkaev (1984) 234, 341  
 Frost (1902) 248, 341  
 Fuller & Lai (2012) 129, 341  
 Fullerton, Gies & Bolton (1996) 261, 342  
 Furness (1915) 9, 342  
 Fusi Pecci *et al.* (1990) 62, 342  
 Gómez (2013) 226, 344  
 Gabriel (1992) 127, 342  
 Gai *et al.* (2011) 152, 342  
 Gallart (1998) 65, 342  
 Gallart *et al.* (2004) 209, 342  
 Gamow (1939) 53, 342  
 García-Alvarez *et al.* (2003a) 37, 342  
 García-Alvarez *et al.* (2003b) 37, 342  
 Gastine & Dintrans (2008a) 123, 342  
 Gastine & Dintrans (2008b) 188, 342  
 Gastine & Dintrans (2011) 123, 342  
 Gautschi (2003) 342  
 Gautschi & Saio (1993) 121, 251, 342  
 Gautschi & Saio (1996) 199, 200, 233, 245, 342  
 Gautschi, Althaus & Saio (2005) 121, 286, 342  
 Gavrilchenko *et al.* (2014) 160, 342  
 Gehmeyr (1992) 154, 342  
 Gehrz (1972) 214, 342  
 Geier (2013a) 267, 343  
 Geier (2013b) 263, 343  
 Geier *et al.* (2013) 268, 343  
 Geier, Classen & Heber (2011) 268, 343  
 Georgy, Saio & Meynet (2014) 259, 343  
 Geroux & Deupree (2013) 154, 343  
 Gianninas, Bergeron & Fontaine (2005) 292, 343  
 Gianninas, Bergeron & Ruiz (2011) 293, 343  
 Gieren *et al.* (2013) 187, 343  
 Gillet (2013) 172, 343  
 Gilliland *et al.* (2010) 28, 343  
 Gilmozzi & Della Valle (2003) 46, 343  
 Gingold (1974) 65, 343  
 Gingold (1976) 65, 206, 343  
 Gingold (1985) 206, 343  
 Giovannelli & Sabau-Graziati (2012) 44–46, 343  
 Girardi (1999) 68, 343  
 Giridhar (2010) 217, 343  
 Giridhar *et al.* (2005) 214, 343  
 Gizon & Birch (2005) 130, 131, 150, 343  
 Gizon, Birch & Spruit (2010) 131, 150, 343  
 Glatzel (2008) 261, 344  
 Glatzel (2009) 116, 261, 344  
 Glatzel & Kaltschmidt (2002) 261, 344  
 Glatzel & Kiriakidis (1993) 261, 344  
 Glatzel, Kiriakidis & Fricke (1993) 116, 261, 344  
 Godart *et al.* (2009b) 255, 344  
 Godart, Dupret & Noels (2009a) 255, 344  
 Gold (1968) 302, 344  
 Goldreich & Keeley (1977) 125, 344  
 Goldreich & Kumar (1990) 125, 344  
 Goldreich & Nicholson (1989) 129, 344  
 Goldreich & Wu (1999a) 125, 281, 344  
 Goldreich & Wu (1999b) 281, 344  
 Goode *et al.* (1998) 125, 344  
 Goodrich (1993) 41, 344  
 Goodricke (1783) 32, 34, 36, 344  
 Gosset & Rauw (2009) 42, 261, 344  
 Gough (1990) 146, 152, 344  
 Gough (1993) 92, 97, 344  
 Gough (2013) 131, 344  
 Goupil *et al.* (2005) 240, 344  
 Goupil, Dziembowski & Fontaine (1998) 156, 344  
 Gräfenr & Vink (2013) 261, 345  
 Gräfenr, Owocki & Vink (2012) 261, 345  
 Graczyk *et al.* (2011) 30, 345  
 Grafton (1993) 11, 345  
 Graham *et al.* (2013) 17, 345  
 Gratton *et al.* (2000) 62, 345  
 Gratton *et al.* (2007) 167, 345  
 Gratton, Sneden & Carretta (2004) 57, 345  
 Grauer & Bond (1984) 282, 345  
 Grec, Fossat & Pomerantz (1983) 150, 345  
 Green *et al.* (2003) 267, 269, 270, 345  
 Green *et al.* (2009) 291, 345  
 Green *et al.* (2011) 263, 272, 273, 345  
 Green, Schmidt & Liebert (1986) 269, 345  
 Greenstein (1984) 278, 345  
 Greggio & Renzini (1990) 66, 345  
 Greiss *et al.* (2014) 294, 345  
 Grevesse & Sauval (1998) 153, 345  
 Grigahcène *et al.* (2010) 240, 241, 346  
 Groenewegen & Salaris (1999) 166, 346  
 Groh, Meynet & Ekström (2013) 41, 346  
 Grott, Chernigovski & Glatzel (2005) 261, 346  
 Gruberbauer *et al.* (2013) 152, 346  
 Gruberbauer, Guenther & Kallinger (2012) 150, 152, 346  
 Guenther & Brown (2004) 152, 346  
 Guenther & Demarque (1996) 152, 346  
 Guerrero & De Marco (2013) 287, 346  
 Guggenberger *et al.* (2012) 171, 346

- Gunn & Ostriker (1970) (*contd.*)  
 Gunn & Ostriker (1970) 302, 346  
 Guo, Li & Lai (2012) 139, 346  
 Gusakov & Kantor (2013) 302, 346  
 Guthnick (1913) 248, 346  
 Guzik *et al.* (2000) 124, 242, 346  
 Guzik *et al.* (2013) 242, 346  
 Guzik, Cox & Despaigne (1999) 261, 346  
 Guzik, Cox & Despaigne (2005) 261, 346  
 Hénault-Brunet *et al.* (2011) 42, 261, 348  
 Habing & Olofsson (2004) 66, 346  
 Hachisu, Kato & Nomoto (1996) 48, 347  
 Hachisu, Kato & Nomoto (1999) 48, 347  
 Haensel, Potekhin & Yakovlev (2007) 303, 347  
 Haisch, Strong & Rodono (1991) 39, 347  
 Halabi, El Eid & Champagne (2012) 69, 347  
 Hall (1972) 36, 37, 347  
 Hall (1976) 36, 347  
 Handberg & Campante (2011) 150, 347  
 Handler (1999) 240, 347  
 Handler (2003) 286, 347  
 Handler (2005) 241, 347  
 Handler (2009) 250, 347  
 Handler (2012) 137, 347  
 Handler & Shobbrook (2002) 240, 347  
 Handler *et al.* (2009) 250, 347  
 Handler *et al.* (2013) 287, 347  
 Hansen, Kawaler & Trimble (2004) 55, 75, 92, 103, 112, 120, 347  
 Harmanec (1999) 248, 347  
 Haro & Luyten (1962) 278, 347  
 Harris (1981) 199, 204, 347  
 Harris (1985) 204, 205, 348  
 Hartmann (2001) 40, 348  
 Hartmann & Kenyon (1985) 39, 348  
 Hartmann & Kenyon (1996) 39, 348  
 Hasinger & van der Klis (1989) 47, 348  
 Hayashi (1966) 58, 348  
 Helminiak *et al.* (2012) 37, 348  
 Hearnshaw (1996) 6, 20, 24, 25, 348  
 Heber (2009) 263, 348  
 Heger *et al.* (2003) 69, 348  
 Hekker (2010) 215, 348  
 Hekker (2013) 131, 348  
 Hekker & Mazumdar (2014) 218, 348  
 Hekker *et al.* (2013) 152, 348  
 Hellier (2001) 45, 348  
 Hema, Pandey & Lambert (2013) 43, 348  
 Henden (2013) 213, 216, 219, 230, 231, 348  
 Hendry & Mochnacki (2000) 36, 37, 348  
 Henrichs *et al.* (2000) 249, 348  
 Henrichs *et al.* (2013) 249, 348  
 Henry & Fekel (2005) 241, 349  
 Henry & Smith (2012) 43, 349  
 Henry *et al.* (2000) 33, 215, 349  
 Henry, Fekel & Henry (2005) 241, 349  
 Henry, Fekel & Henry (2011) 240–242, 349  
 Hensler (1979) 35, 349  
 Herbig (1960) 40, 349  
 Herbig (1989) 40, 349  
 Herbig (2008) 40, 349  
 Herbst (2012) 40, 41, 349  
 Herbst *et al.* (1994) 40, 349  
 Hermes *et al.* (2011) 275, 293, 294, 349  
 Hermes *et al.* (2012a) 39, 349  
 Hermes *et al.* (2012b) 296, 349  
 Hermes *et al.* (2013a) 294, 295, 349  
 Hermes *et al.* (2013b) 275, 293, 296, 297, 349  
 Hermes *et al.* (2013c) 283, 349  
 Hermes *et al.* (2013d) 296, 349  
 Hernández *et al.* (2004) 40, 349  
 Hertzprung (1909) 68, 349  
 Hertzprung (1911) 195, 349  
 Hertzprung (1926) 187, 350  
 Herwig (2005) 66, 69–71, 350  
 Hesser, Lasker & Neupert (1976) 279, 350  
 Hessman (1991) 40, 350  
 Hewish *et al.* (1968) 302, 350  
 Heynderickx, Waelkens & Smeyers (1994) 249, 350  
 Hilditch, Harries & Hill (1996) 33, 350  
 Hillebrandt & Niemeyer (2000) 49, 350  
 Hillenbrand *et al.* (1992) 40, 350  
 Hillier, Dessart & Li (2013) 49, 350  
 Hirata *et al.* (1987) 49, 350  
 Hirshfeld (1980) 210, 350  
 Hjorth & Bloom (2012) 49, 350  
 Hoffleit (1965) 350  
 Hoffleit (1986) 23, 350  
 Hoffleit (1997) 3, 350  
 Hoffmeister, Richter & Wenzel (1985) 14, 350  
 Horne & Baliunas (1986) 17, 350  
 Hoskins (1982) 1–3, 350  
 Houdek (2006) 125, 127–129, 350  
 Houdek (2008) 123, 350  
 Houdek & Gough (2002) 125, 218, 350  
 Houdek *et al.* (1999) 125, 350  
 Houk (1963) 230, 350  
 Howe (2009) 144, 150, 152, 350  
 Howell *et al.* (2014) 28, 351  
 Howell, Nelson & Rappaport (2001) 47, 350  
 Hoyle (1960) 68, 351  
 Hoyle & Fowler (1960) 49, 351  
 Hoyle & Lyttleton (1943) 10, 351  
 Hu *et al.* (2008) 267, 268, 351  
 Hu *et al.* (2011) 268, 351  
 Hubble (1925) 191, 351

- Hubble & Sandage (1953) 41, 351  
 Huber *et al.* (2009) 37, 351  
 Huber *et al.* (2011) 149, 351  
 Huber *et al.* (2012) 152, 351  
 Huber *et al.* (2014) 152, 351  
 Hubrig *et al.* (2006) 34, 352  
 Hubrig *et al.* (2009) 150, 244, 352  
 Hubrig *et al.* (2011a) 36, 351  
 Hubrig *et al.* (2011b) 249, 352  
 Hubrig *et al.* (2011c) 247, 352  
 Huebner *et al.* (1977) 121, 122, 352  
 Hughes & Wood (1990) 71, 352  
 Humphreys & Davidson (1994) 41, 126, 261, 352  
 Hurley, Tout & Pols (2002) 35, 352  
 Iben (1964) 62, 352  
 Iben (1965) 58, 60, 66, 352  
 Iben (1967) 58, 352  
 Iben (1968a) 62, 352  
 Iben (1968b) 62, 352  
 Iben (1971) 61, 62, 64, 352  
 Iben (1982) 58, 65, 352  
 Iben (1991) 58, 352  
 Iben (2013) 67, 69, 352  
 Iben & Livio (1993) 35, 352  
 Iben & Renzini (1983) 65, 66, 69, 352  
 Iben & Rood (1970) 58, 64, 352  
 Iglesias & Rogers (1996) 87, 352  
 Iglesias, Rogers & Wilson (1992) 121, 352  
 Ikhsanov & Beskrovnaya (2012) 45, 352  
 Iliadis (2007) 87, 352  
 Ismailov (2005) 40, 352  
 Israel *et al.* (2005) 130, 302, 353  
 Ita (2009) 227, 353  
 Ita & Matsunaga (2011) 227, 353  
 Ita *et al.* (2004) 198, 221, 353  
 Iwamoto *et al.* (1998) 48, 353  
 Jackson *et al.* (2012) 38, 353  
 Jameson (1986) 159, 353  
 Janka (2012) 49, 353  
 Jeans (1902) 59, 353  
 Jeans (1925) 10, 353  
 Jeffery (1994) 258, 353  
 Jeffery (2008a) 50, 353  
 Jeffery (2008b) 253, 256, 257, 353  
 Jeffery (2011) 272, 353  
 Jeffery (2012) 273, 353  
 Jeffery (2014) 256–258, 353  
 Jeffery & Saio (2006a) 267, 353  
 Jeffery & Saio (2006b) 273, 354  
 Jeffery & Saio (2007) 121, 267, 354  
 Jeffery & Saio (2013) 299, 354  
 Jeffery *et al.* (2011) 181, 354  
 Jeffery *et al.* (2013) 273, 353  
 Jeon, Kim & Nemec (2010) 235, 354  
 Jess *et al.* (2012) 125, 354  
 Jetsu *et al.* (2013) 3, 354  
 Jiang *et al.* (2010) 38, 354  
 Jiménez, García & Pallé (2011) 136, 354  
 Johnson *et al.* (2014) 270, 271, 354  
 Jones & Boyd (1971) 23, 354  
 Jorissen *et al.* (1997) 215, 354  
 José & Hernanz (2007) 46, 354  
 José & Iliadis (2011) 46, 354  
 Joy (1937) 197, 354  
 Joy (1940) 197, 354  
 Joy (1945) 40, 354  
 Joy (1949) 199, 200, 354  
 Jura (1986) 214, 354  
 Jurcsik & Kovács (1996) 163, 355  
 Jurcsik *et al.* (2001) 207, 354  
 Jurcsik *et al.* (2009) 170, 354  
 Jurcsik *et al.* (2012) 178, 179, 354  
 Kallinger *et al.* (2010) 152, 355  
 Kamper (1996) 195, 355  
 Kanaan *et al.* (2005) 294, 355  
 Kanbur & Simon (1994) 121, 355  
 Karetnikov *et al.* (2007) 22, 355  
 Karlsson (2013) 228, 355  
 Karoff & Kjeldsen (2008) 130, 355  
 Karoff *et al.* (2007) 27, 355  
 Karoff *et al.* (2008) 251, 355  
 Karovicova *et al.* (2011) 225, 355  
 Karovska (1999) 225, 355  
 Karovska (2006) 226, 355  
 Karovska *et al.* (1997) 225, 355  
 Kato (1966) 296, 355  
 Kawaler (1987) 149, 356  
 Kawaler (2006) 268, 356  
 Kawaler (2010) 268, 356  
 Kawaler & Bradley (1994) 149, 356  
 Kawaler & Hostler (2005) 268, 356  
 Kawaler, Sekii & Gough (1999) 143, 356  
 Kaye *et al.* (1999) 240, 356  
 Kazarovets *et al.* (2009) 7, 356  
 Keeley (1970) 218, 356  
 Kemper (1982) 162, 356  
 Kenyon (1990) 48, 356  
 Kenyon (1992) 48, 356  
 Kenyon (2009) 48, 356  
 Kepler *et al.* (2003) 289, 356  
 Kepler *et al.* (2005) 282, 356  
 Kervella *et al.* (2004) 152, 356  
 Kholopov *et al.* (1998) 4, 7, 29, 74, 77, 100, 199, 356  
 Kienzle *et al.* (1999) 186, 356  
 Kilkenney (2007) 263, 265, 269, 356  
 Kilkenney (2010) 270, 357

- Kilkenny & Koen (1995) (*contd.*)  
 Kilkenny & Koen (1995) 256, 357  
 Kilkenny *et al.* (1997a) 266, 268, 269, 357  
 Kilkenny *et al.* (1997b) 268, 357  
 Kilkenny *et al.* (1998) 33, 357  
 Kilkenny *et al.* (2010) 265, 269, 357  
 Kilkenny *et al.* (2014) 296, 357  
 Kinemuchi (2011) 28, 357  
 Kinemuchi *et al.* (2006) 164, 174, 357  
 King (1980) 258, 357  
 King (1988) 47, 357  
 King & Cox (1968) 123, 357  
 King, Cox & Hodson (1981) 155, 357  
 King, Da Costa & Demarque (1985) 62, 357  
 Kipping *et al.* (2012) 33, 357  
 Kiriakidis & Glatzel (1994) 261, 357  
 Kiriakidis, El Eid & Glatzel (1992) 121, 122, 357  
 Kiriakidis, Fricke & Glatzel (1993) 261, 357  
 Kiss, Szabó & Bedding (2006) 230, 231, 357  
 Kitamura & Nakamura (1988) 38, 357  
 Kitiashvili *et al.* (2011) 125, 358  
 Kitiashvili *et al.* (2013a) 125, 357  
 Kitiashvili *et al.* (2013b) 125, 358  
 Kjeldsen & Bedding (1995) 149, 156, 358  
 Kjeldsen *et al.* (1995) 125, 358  
 Kluyver (1935) 154, 358  
 Kluyver (1936) 171, 358  
 Kołaczowski *et al.* (2004) 251, 358  
 Kołaczowski *et al.* (2006) 251, 358  
 Kochukhov (2004) 244, 358  
 Kochukhov (2009) 242–244, 358  
 Kochukhov (2011) 36, 358  
 Kochukhov & Wade (2007) 244, 358  
 Kochukhov *et al.* (2011) 36, 358  
 Kochukhov *et al.* (2013) 233, 244, 358  
 Koen (2012) 270, 358  
 Kok (2010) 46, 358  
 Kokkotas & Schmidt (1999) 302, 358  
 Kolenberg (2002) 97, 114, 358  
 Kolenberg (2011) 170, 358  
 Kolenberg (2013) 358  
 Kolenberg & Bagnulo (2009) 171, 358  
 Kolenberg *et al.* (2006) 103, 359  
 Kolenberg *et al.* (2010a) 168, 359  
 Kolenberg *et al.* (2010b) 155, 359  
 Kolenberg *et al.* (2011) 171, 359  
 Kolláth *et al.* (2002) 154, 359  
 Kolláth, Molnár & Szabó (2011) 155, 359  
 Konoplya & Zhidenko (2011) 304, 359  
 Koopmann *et al.* (1994) 167, 177, 179, 359  
 Kopacki & Pigulski (2013) 239, 359  
 Kopal (1949) 132, 359  
 Korhonen *et al.* (1999) 38, 359  
 Korhonen, Berdyugina & Tuominen (2004) 38, 359  
 Kosovichev (1995) 127, 128, 359  
 Kosovichev (2006) 130, 359  
 Kosovichev (2009) 127, 130, 359  
 Kosovichev (2011) 127, 130, 131, 134, 138, 141, 142, 150, 152, 359  
 Kosovichev & Zharkova (1998) 130, 359  
 Kotko (2012) 45, 359  
 Kourniotis *et al.* (2014) 251, 360  
 Kovács (1998) 160, 360  
 Kovács (2005) 164, 360  
 Kovács & Buchler (1989) 154, 360  
 Kovács, Buchler & Marom (1991) 121, 360  
 Kovtyukh *et al.* (2008) 74, 360  
 Kozłowski *et al.* (2013) 26, 360  
 Kramers (1923) 117, 360  
 Kroll (2009) 22, 360  
 Kron (1947) 37, 360  
 Kukarkin *et al.* (1972) 279, 360  
 Kukarkin, Kholopov & Perova (1970) 279, 360  
 Kumar, Goldreich & Kerswell (1994) 156, 360  
 Kunder & Chaboyer (2009) 164, 174, 360  
 Kunder *et al.* (2011) 177, 360  
 Kunder *et al.* (2013) 159, 360  
 Kupka *et al.* (2009) 125, 360  
 Kurayama, Kobayashi & Sasao (2005) 221, 360  
 Kurtz (1982) 35, 243, 360  
 Kurtz (2002a) 236, 361  
 Kurtz (2002b) 8, 361  
 Kurtz (2013) 234, 243, 244, 361  
 Kurtz *et al.* (2006a) 244, 361  
 Kurtz *et al.* (2008a) 244, 361  
 Kurtz *et al.* (2008b) 296, 298, 361  
 Kurtz *et al.* (2011) 35, 237, 243, 361  
 Kurtz *et al.* (2013) 296, 298, 361  
 Kurtz, Elkin & Mathys (2006b) 150, 361  
 Kwee (1967) 200, 361  
 Lüftinger *et al.* (2010) 34, 365  
 Lázaro *et al.* (2012) 37, 363  
 Lacour *et al.* (2009) 225, 361  
 Lafler & Kinman (1965) 17, 27, 361  
 Lamb (1932) 134, 361  
 Lançon & Wood (2000) 217, 361  
 Landau & Lifshitz (1959) 131, 361  
 Landolt (1968) 278, 279, 361  
 Landolt (1975) 256, 361  
 Landolt & Blondeau (1972) 13, 361  
 Laney, Joner & Schwendiman (2002) 239, 362  
 Langer (2012) 49, 362  
 Langer *et al.* (1994) 261, 362  
 Lankford (1997) 185, 362

- Lanza (2011) 33, 362  
 Larson & Starrfield (1971) 116, 362  
 Laskarides (1974) 179, 362  
 Lasker & Hesser (1971) 279, 362  
 Latour *et al.* (2011) 271, 362  
 Lattimer & Prakash (2004) 303, 362  
 Law *et al.* (2009) 38, 362  
 Lawrie *et al.* (2013) 291, 362  
 Lawson & Kilkenny (1996) 258, 362  
 Lawson *et al.* (1990) 42, 362  
 Laycock *et al.* (2010) 22, 362  
 Layden (1994) 162, 362  
 Layden (1995) 164, 174, 362  
 Layden *et al.* (1999) 173, 362  
 Le Borgne *et al.* (2007) 178, 363  
 Le Borgne *et al.* (2014) 171, 363  
 Leavitt (1908) 184, 363  
 Leavitt & Pickering (1912) 184, 363  
 Lebreton (2013) 152, 363  
 Lebreton *et al.* (2009) 255, 363  
 Lebzelter & Obbrugger (2009) 232, 363  
 Lebzelter *et al.* (1995) 232, 363  
 Ledoux (1941) 107, 115, 363  
 Ledoux (1947) 54, 363  
 Ledoux (1951) 140, 142, 249, 363  
 Ledoux (1974) 131, 280, 363  
 Ledoux & Walraven (1958) 94, 107, 112, 115, 132, 363  
 Ledoux, Simon & Bielaire (1955) 114, 363  
 Lee (1991) 179, 180, 363  
 Lee (2006) 252, 363  
 Lee (2012) 252, 363  
 Lee & Osaki (1982) 121, 363  
 Lee & Zinn (1990) 177, 363  
 Lee *et al.* (2008) 235, 236, 363  
 Lee *et al.* (2010) 36, 363  
 Lefèvre *et al.* (2005) 261, 364  
 Lefever, Puls & Aerts (2007) 253, 258, 364  
 Lehmann *et al.* (2011) 250, 364  
 Leibacher & Stein (1971) 131, 364  
 Leighton (1960) 130, 364  
 Leighton, Noyes & Simon (1962) 131, 364  
 Lemasle *et al.* (2013) 184, 364  
 Lenain *et al.* (2006) 116, 364  
 Lenz (2011) 251, 364  
 Lenz & Breger (2005) 17, 364  
 Lesh & Aizenman (1978) 248, 249, 364  
 Li (2000) 108, 364  
 Li, Han & Zhang (2005) 38, 364  
 Limongi & Chieffi (2008) 69, 364  
 Lindblom & Detweiler (1983) 302, 364  
 Loh (1978) 25, 364  
 Lomb (1976) 17, 364  
 Long, Romanova & Lamb (2012) 46, 364  
 Longland *et al.* (2011) 43, 364  
 Longland *et al.* (2012) 43, 364  
 Longmore, Fernley & Jameson (1986) 166, 364  
 Lopes & Turck-Chièze (1994) 146, 364  
 Lorenzetti *et al.* (2012) 40, 365  
 Lovekin & Guzik (2013) 261, 365  
 Lucy (1976) 253, 258, 365  
 Ludendorff (1928) 228, 365  
 Luthardt (1992) 48, 365  
 Lutz *et al.* (2009) 265, 365  
 Lynas-Gray (2013) 156, 270, 365  
 Lynas-Gray, Rodríguez-López & Kilkenny (2010) 270, 365  
 Lyne & Bailes (1992) 13, 14, 365  
 Lyne *et al.* (2010) 302, 365  
 Maas, Giridhar & Lambert (2007) 203, 207, 365  
 MacFadyen & Woosley (1999) 49, 365  
 Mackey & van den Bergh (2005) 175, 365  
 Madore (1982) 191, 365  
 Madore & Freedman (1991) 186, 189, 365  
 Maeder (1980) 258, 365  
 Maeder & Meynet (2000) 67, 365  
 Mager, Madore & Freedman (2013) 192, 365  
 Maintz & de Boer (2005) 164, 365  
 Maisonneuve *et al.* (2011) 240, 365  
 Majaess (2010) 205, 365  
 Majaess, Turner & Gieren (2013) 192, 365  
 Makaganiuk *et al.* (2012) 36, 366  
 Mamajek *et al.* (2012) 33, 366  
 Mantegazza *et al.* (2012) 127, 240, 242, 366  
 Marconi & Palla (1998) 154, 236, 366  
 Marconi *et al.* (2005) 154, 366  
 Marconi *et al.* (2013) 154, 366  
 Marconi, Fiorentino & Caputo (2004) 209, 366  
 Martin *et al.* (2007) 226, 366  
 Mathias & Waelkens (1995) 250, 366  
 Mathis & de Brye (2012) 125, 366  
 Mathur *et al.* (2012) 152, 366  
 Mathys *et al.* (1997) 243, 244, 366  
 Mathys, Kurtz & Elkin (2007) 244, 366  
 Matsunaga *et al.* (2006) 205, 367  
 Matsunaga, Feast & Menzies (2009a) 203, 366  
 Matsunaga, Feast & Menzies (2009b) 198, 366  
 Matsunaga, Feast & Soszyński (2011) 200, 201, 205, 367  
 Matsuura *et al.* (2002) 212, 367  
 Matthews (2005) 27, 367  
 Mauerhan *et al.* (2013) 41, 367  
 Maxted *et al.* (2011) 298, 367

- Maxted *et al.* (2013) (*contd.*)  
 Maxted *et al.* (2013) 298, 299, 367  
 Maxted *et al.* (2014) 299, 367  
 Mayer *et al.* (2011) 226, 367  
 Mazeh (2008) 38, 367  
 McCarthy & Nemec (1997) 211, 367  
 McCarthy & Seidelmann (2009) 14, 367  
 McCook & Sion (1999) 276, 278, 367  
 McDermott, van Horn & Hansen (1988) 302, 367  
 McGraw (1979) 280, 367  
 McGraw & Robinson (1976) 279, 368  
 McGraw *et al.* (1979) 282, 285, 367  
 McKee & Ostriker (2007) 116, 368  
 McNamara (1985) 248, 368  
 McNamara (1995) 205, 368  
 McNamara (1997) 77, 98, 100, 238, 368  
 McNamara (2000) 236, 368  
 McNamara (2011) 167, 238, 368  
 McNamara, Clementini & Marconi (2007) 239, 368  
 Meléndez *et al.* (2008) 57, 368  
 Melikian (1999) 228, 368  
 Mengel & Sweigart (1981) 63, 368  
 Mennessier (1985) 228, 368  
 Mennesson *et al.* (2002) 225, 368  
 Menon *et al.* (2013) 43, 368  
 Merrill (1940) 217, 368  
 Merrill (1944) 48, 368  
 Merrill (1952) 220, 368  
 Merrill & Humason (1932) 47, 368  
 Metcalfe (2003) 283, 368  
 Metcalfe, Montgomery & Kanaan (2004) 294, 368  
 Metcalfe, Salaris & Winget (2002) 283, 368  
 Metcalfe, Winget & Charbonneau (2001) 283, 368  
 Meynet *et al.* (2013) 69, 369  
 Miceli *et al.* (2008) 26, 174, 369  
 Michaud (1970) 34, 369  
 Michaud & Richer (2013) 267, 369  
 Michaud *et al.* (2004) 68, 369  
 Michaud, Richer & Richard (2011) 267, 369  
 Michelson & Pease (1921) 231, 369  
 Miglio *et al.* (2008) 149, 369  
 Miglio *et al.* (2013) 149, 152, 369  
 Miglio, Montalbán & Dupret (2007) 249, 369  
 Miller Bertolami *et al.* (2013) 116, 273, 369  
 Miller Bertolami, Córscico & Althaus (2011) 116, 273, 369  
 Miller *et al.* (2011) 39, 369  
 Milligan & Carson (1992) 242, 369  
 Minkowski (1941) 48, 369  
 Minniti *et al.* (2010) 8, 26, 370  
 Mirzoyan (1990) 39, 370  
 Mirzoyan & Hambarian (1994) 39, 370  
 Mislis & Hodgkin (2012) 39, 370  
 Mislis *et al.* (2012) 39, 370  
 Mochkovitch (2001) 48, 370  
 Modjaz (2011) 49, 370  
 Moehler *et al.* (1990) 263, 370  
 Moehler, Landsman & Napiwotzki (1998) 66, 370  
 Moffat (2012) 261, 370  
 Moffat & Shara (1986) 42, 370  
 Moffat *et al.* (2008) 42, 370  
 Molnár *et al.* (2012) 156, 370  
 Monson (2014) 165, 370  
 Monson *et al.* (2012) 192, 370  
 Montañés Rodríguez & Jeffery (2002) 255, 371  
 Montalbán *et al.* (2012) 137, 140, 370  
 Montalbán *et al.* (2013) 149, 370  
 Montgomery (2005) 288, 371  
 Montgomery *et al.* (2008) 282, 290, 371  
 Montgomery *et al.* (2010) 279, 288, 371  
 Moravveji *et al.* (2012a) 253, 254, 258, 371  
 Moravveji, Moya & Guinan (2012b) 117, 258, 371  
 Morgan, Wahl & Wieckhorst (2007) 164, 371  
 Morris (1985) 38, 371  
 Moskalik (1995a) 121, 371  
 Moskalik (1995b) 249, 251, 371  
 Moskalik & Buchler (1990) 154, 371  
 Moskalik & Dziembowski (1992) 121, 371  
 Moskalik & Kołaczowski (2009) 189, 371  
 Moskalik *et al.* (2013) 170, 371  
 Mosser *et al.* (2011) 138, 149, 371  
 Mosser *et al.* (2012a) 138, 143, 372  
 Mosser *et al.* (2012b) 138, 372  
 Mosser *et al.* (2013b) 230, 371  
 Mosser *et al.* (2013c) 146, 372  
 Mosser, Belkacem & Vrad (2013a) 137, 371  
 Mowlavi *et al.* (2013) 248, 372  
 Moya & Rodríguez-López (2010) 107, 372  
 Mukadam *et al.* (2006) 293, 372  
 Mukadam *et al.* (2007) 301, 372  
 Mukadam *et al.* (2013a) 283, 372  
 Mukadam *et al.* (2013b) 276, 300, 301, 372  
 Mullally *et al.* (2008) 282, 372  
 Mullally *et al.* (2009) 14, 282, 372  
 Mullan & Ulrich (1988) 82, 372  
 Mullan (1975), 36, 372  
 Munari (2012) 48, 372  
 Munari & Renzini (1992) 48, 372  
 Mundprecht, Muthsam & Kupka (2013) 154, 372  
 Munteanu *et al.* (2005) 218, 372

- Murphy (1968) 154, 372  
 Murphy *et al.* (2013) 237, 373  
 Musella *et al.* (2012) 181, 373  
 Nagel & Werner (2004) 285, 373  
 Nardetto *et al.* (2011) 249, 373  
 Naslim *et al.* (2011) 272, 273, 373  
 Naslim *et al.* (2013) 267, 373  
 Nather *et al.* (1990) 286, 373  
 Neilson *et al.* (2012a) 196, 373  
 Neilson *et al.* (2012b) 193, 373  
 Neiner (2011) 248, 373  
 Neiner *et al.* (2012) 126, 373  
 Neiner *et al.* (2014) 44, 246, 248, 373  
 Nelemans (2005) 45, 373  
 Nemec (1985) 159, 373  
 Nemec (2004) 373  
 Nemec & Mateo (1990) 233, 234, 237, 374  
 Nemec *et al.* (2013) 170, 374  
 Nemec, Mendes de Oliveira & Wehlau (1988) 209, 374  
 Nemec, Nemec & Lutz (1994) 205, 238, 374  
 Nesvacil *et al.* (2012) 34, 374  
 Ngeow (2012) 191, 374  
 Nicholls *et al.* (2009) 230, 374  
 Nijland (1914) 7, 374  
 Nitta *et al.* (2009) 287, 374  
 Noels (1998) 107, 114, 120, 374  
 Noels, Dupret & Godart (2008) 116, 261, 374  
 Nomoto & Kondo (1991) 294, 374  
 Nomoto & Sugimoto (1977) 49, 374  
 Nomoto, Thielemann & Yokoi (1984) 49, 374  
 Nomura, Naito & Shibahashi (2012) 35, 374  
 Nordgren *et al.* (2000) 77, 374  
 Norris (1968) 35, 374  
 Norris (1971) 374  
 North & Paltani (1994) 251, 374  
 Nowakowski & Dziembowski (2003) 171, 374  
 Nyquist (1928) 17, 375  
 O'Brien (2000) 286, 375  
 O'Connell (1999) 66, 375  
 Ogilvie & Lin (2007) 129, 375  
 Oke & Searle (1974) 49, 375  
 Oláh *et al.* (2006) 38, 375  
 Olech *et al.* (2005) 236, 239, 375  
 Olivier & Wood (2005) 108, 218, 375  
 Oluseyi *et al.* (2011) 26, 375  
 Oosterhoff (1939) 173, 375  
 Oreiro *et al.* (2005) 265, 375  
 Osaki (1971) 249, 375  
 Osaki (1975) 134, 139, 249, 375  
 Osaki (1986) 44, 375  
 Osaki (1993) 121, 375  
 Osaki & Hansen (1973) 280, 375  
 Osborn (1969) 207, 375  
 Osborn, Kopacki & Haberstroh (2012) 211, 375  
 Østensen (2009) 263, 375  
 Østensen (2012) 270, 375  
 Østensen (2013) 290, 375  
 Østensen (2014) 270, 376  
 Østensen *et al.* (2010) 263, 269, 376  
 Østensen *et al.* (2011) 270, 376  
 Østensen *et al.* (2011a) 276, 290, 293, 376  
 Østensen *et al.* (2011b) 269, 376  
 Østensen *et al.* (2012) 270, 376  
 Osterbrock (2001) 197, 376  
 Ostlie & Cox (1986) 218, 376  
 Ostriker & Gunn (1969) 302, 376  
 Ostrowski (2014) 255, 376  
 Ouazzani *et al.* (2013) 138, 143, 376  
 Pápics *et al.* (2012) 250, 377  
 Pápics *et al.* (2013) 129, 250, 377  
 Pacini (1967) 302, 376  
 Pacini (1968) 302, 376  
 Paczyński (1996) 30, 376  
 Paczyński & Rudak (1980) 48, 376  
 Pamyatnykh (1999) 249, 376  
 Pamyatnykh (2002) 249, 376  
 Pandey & Lambert (2011) 43, 251, 376  
 Pandey & Singh (2012) 37, 376  
 Pandey, Lambert & Rao (2008) 43, 376  
 Panov & Dimitrov (2007) 38, 376  
 Paparó *et al.* (1998) 179, 377  
 Paparó *et al.* (2013) 150, 240, 377  
 Pasek *et al.* (2012) 146, 377  
 Patterson (1984) 45, 47, 377  
 Patterson (1994) 45, 377  
 Payne-Gaposchkin (1954) 230, 377  
 Payne-Gaposchkin (1957) 46, 48, 377  
 Pease (1931) 221, 377  
 Pekeris (1938) 130, 132, 377  
 Penrod (1986) 44, 377  
 Percy (1978) 248, 377  
 Percy (1986) 44, 377  
 Percy (2007) 36, 377  
 Percy & Au (1999) 228, 377  
 Percy & Colivas (1999) 228, 377  
 Percy & Hale (1998) 207, 377  
 Percy & Hoss (2000) 207, 377  
 Percy & Lane (1977) 251, 378  
 Percy & Tan (2013) 178, 378  
 Percy *et al.* (1997) 212, 377  
 Percy *et al.* (2008) 231, 377  
 Percy *et al.* (2010) 40, 377  
 Percy, Ralli & Sen (1993) 17, 378  
 Perlmutter *et al.* (1999) 48, 378  
 Perrin *et al.* (2004) 221, 225, 378  
 Perryman *et al.* (1997) 192, 378

- Perryman *et al.* (2001) (*contd.*)  
 Perryman *et al.* (2001) 28, 378  
 Pesnell (1987) 124, 378  
 Petersen (1973) 168, 378  
 Petersen (1989) 121, 378  
 Petersen (1990) 121, 378  
 Petersen & Christensen-Dalsgaard (1996) 234–236, 378  
 Petersen & Christensen-Dalsgaard (1999) 238, 239, 378  
 Petersen & Freyhammer (2002) 239, 378  
 Petersen & Jørgensen (1972) 236, 378  
 Peterson *et al.* (2011) 36, 378  
 Petit (1987) 379  
 Pettersen, Olah & Sandmann (1992) 37, 378  
 Pettit & Nicholson (1933) 222, 379  
 Pickering (1895) 23, 379  
 Pickering *et al.* (1901) 157, 249, 379  
 Pierce, Jurcevic & Crabtree (2000) 231, 379  
 Pietrinferni *et al.* (2006) 82, 379  
 Pietrukowicz (2002) 195, 379  
 Pietrzyński (2014) 299, 379  
 Pietrzyński *et al.* (2012) 299, 379  
 Pigulski & Pojmański (2008) 245, 249, 379  
 Pijpers (2006) 131, 152, 379  
 Plachy *et al.* (2014) 212, 379  
 Plaskett (1928) 48, 379  
 Plummer (1913) 9, 379  
 Podsiadlowski *et al.* (2004) 49, 379  
 Pojmański (2009) 25, 379  
 Poleski (2008) 195, 379  
 Pollard (2009) 233, 240, 379  
 Pollard *et al.* (1996) 211, 379  
 Popper (1980) 30, 379  
 Poretti *et al.* (2008) 239, 379  
 Poretti *et al.* (2011) 240, 380  
 Porter & Rivinius (2003) 44, 380  
 Press (1981) 125, 380  
 Preston (1959) 162, 380  
 Preston *et al.* (1963) 213, 380  
 Prieto *et al.* (2013) 41, 380  
 Pritzl *et al.* (2000) 173, 380  
 Pritzl *et al.* (2002a) 209, 380  
 Pritzl *et al.* (2002b) 181, 380  
 Pritzl *et al.* (2003) 167, 173, 204, 205, 380  
 Pritzl *et al.* (2005) 209, 380  
 Pritzl *et al.* (2011) 181, 380  
 Provencal (1986) 207, 380  
 Provencal *et al.* (2009) 289, 290, 380  
 Provencal *et al.* (2012) 288, 381  
 Pulone (1992) 65, 381  
 Puls, Vink & Najarro (2008) 42, 381  
 Pyper (1969) 35, 381  
 Qian *et al.* (2010a) 14, 381  
 Qian *et al.* (2010b) 14, 381  
 Quirion (2009) 122, 381  
 Quirion *et al.* (2008) 121, 381  
 Quirion, Fontaine & Brassard (2004) 285, 381  
 Quirion, Fontaine & Brassard (2007) 275, 282, 285, 381  
 Quirion, Fontaine & Brassard (2012) 285, 286, 381  
 Rabidoux *et al.* (2010) 200, 207, 381  
 Rabinowitz (1957) 114, 381  
 Racine (1971) 68, 381  
 Ragland *et al.* (2006) 225, 381  
 Randall *et al.* (2011) 269–271, 381  
 Randall *et al.* (2012) 264, 267, 271, 382  
 Randall *et al.* (2013) 270, 271, 382  
 Randall, Calamida & Bono (2009) 269, 270, 381  
 Randall, Calamida & Bono (2010) 269, 270, 381  
 Rao *et al.* (2012) 43, 382  
 Rappaport, Verbunt & Joss (1983) 47, 382  
 Rasio & Shapiro (1995) 38, 382  
 Rastorguev *et al.* (2013) 187, 382  
 Rathbun & Smith (1997) 179, 382  
 Rauer *et al.* (2014) 28, 382  
 Ravi *et al.* (2011) 231, 382  
 Ray (1994) 40, 383  
 Recio-Blanco & de Laverny (2007) 62, 383  
 Reed *et al.* (2004) 270, 383  
 Reed *et al.* (2010) 265, 383  
 Reed *et al.* (2011) 149, 268, 383  
 Reed *et al.* (2012a) 270, 383  
 Reed *et al.* (2012b) 263, 270, 383  
 Reese (2013) 145, 383  
 Reese *et al.* (2009) 150, 383  
 Reese *et al.* (2012) 152, 383  
 Reese *et al.* (2013) 146, 240, 383  
 Reese, Lignières & Rieutord (2008) 82, 383  
 Reid & Goldston (2002) 223, 224, 383  
 Reid, Hughes & Glass (1995) 71, 383  
 Reig (2011) 47, 383  
 Reimann (1994) 17, 383  
 Reisenegger & Goldreich (1992) 302, 383  
 Remage Evans *et al.* (2013) 192, 384  
 Renzini (1981) 66, 384  
 Renzini (1983) 384  
 Renzini (1990) 43, 384  
 Renzini & Fusi Pecci (1988) 58, 384  
 Renzini *et al.* (1992) 69, 384  
 Renzini, Mengel & Sweigart (1977) 207, 384  
 Rest *et al.* (2012) 260, 384  
 Ribeiro & Baptista (2011) 33, 384  
 Richards (1990a) 36, 384  
 Richards (1990b) 36, 384

- Richards (1992) 36, 384  
 Richards & Albright (1993) 36, 384  
 Richardson, Hill & Stassun (2012) 130, 384  
 Ricker *et al.* (2015) 28, 384  
 Ridgway (2012) 26, 384  
 Riess *et al.* (1998) 48, 384  
 Ripepi *et al.* (2014a) 209, 385  
 Ripepi *et al.* (2014b) 236, 385  
 Ritter (1879) 10, 73, 77, 130, 385  
 Ritter (1986) 33, 385  
 Ritter (2012) 45, 385  
 Rivinius, Baade & Štefl (2003) 247, 248, 385  
 Rivinius, Carciofi & Martayan (2013) 44, 246, 248, 385  
 Robe (1968) 132, 385  
 Robinson (1976) 45, 385  
 Robinson, Kepler & Nather (1982) 280, 385  
 Robinson, Nather & McGraw (1976) 280, 385  
 Rodríguez & Breger (2001) 233, 238, 385  
 Rodríguez-Gil *et al.* (2007) 47, 385  
 Rodríguez-López *et al.* (2010a) 263, 270, 385  
 Rodríguez-López *et al.* (2010b) 109, 121, 270, 385  
 Rodríguez-López, Ulla & Garrido (2007) 275, 385  
 Rogers & Glatzmaier (2006) 125, 385  
 Rogers & Iglesias (1992) 121, 122, 385  
 Rogers *et al.* (2013) 125, 126, 385  
 Rolfs & Rodney (1988) 87, 385  
 Romero *et al.* (2013) 294, 295, 385  
 Rood (1972) 62, 385  
 Rosen, McLaughlin & Thompson (2011) 302, 303, 386  
 Rosenblatt (1971) 33, 386  
 Rosseland (1931a) 107, 386  
 Rosseland (1931b) 130, 132, 386  
 Rosseland (1943) 154, 386  
 Rosseland (1946) 46, 386  
 Rosseland (1949) 96, 107, 111, 154, 386  
 Roxburgh (2010) 152, 386  
 Rozelot & Neiner (2011) 131, 386  
 Rubbmark *et al.* (1981) 139, 386  
 Ruderman (1968) 302, 386  
 Söderhjelm (1980) 32, 393  
 Sódor, Szeidl & Jurcsik (2007) 170, 393  
 Sachkov *et al.* (2011) 244, 386  
 Saesen *et al.* (2013) 252, 386  
 Saio (1993) 121, 257, 386  
 Saio (1996) 285, 386  
 Saio (2005) 244, 386  
 Saio (2008) 42, 256, 386  
 Saio (2009) 42, 116, 256–258, 386  
 Saio (2011a) 121, 261, 386  
 Saio (2011b) 116, 386  
 Saio (2012) 122, 386  
 Saio (2013a) 146, 386  
 Saio (2013b) 291, 386  
 Saio (2014) 123, 242–245, 249, 258, 261, 386  
 Saio & Cox (1980) 121, 387  
 Saio & Jeffery (1988) 257, 387  
 Saio *et al.* (2006) 252–255, 387  
 Saio *et al.* (2012) 35, 242, 244, 387  
 Saio, Georgy & Meynet (2013a) 117, 253, 258, 259, 261, 387  
 Saio, Georgy & Meynet (2013b) 261, 387  
 Salaris & Cassisi (2005) 55, 58, 65–69, 387  
 Salaris, Chieffi & Straniero (1993) 57, 387  
 Salmon *et al.* (2012) 251, 387  
 Samadi (2011) 125, 387  
 Samadi & Goupil (2001) 125, 387  
 Samus (1998) 29, 387  
 Sandage (1958a) 165, 387  
 Sandage (1958b) 189, 387  
 Sandage (1981) 164, 165, 176, 387  
 Sandage (1990a) 161, 387  
 Sandage (1990b) 165, 387  
 Sandage (2004) 164, 387  
 Sandage (2005) 197, 387  
 Sandage & Tammann (2006) 192, 387  
 Sandage, Diethelm & Tammann (1994) 200, 387  
 Sandquist (2004) 68, 388  
 Santolamazza *et al.* (2001) 108, 239, 388  
 Sartoretti & Schneider (1999) 33, 388  
 Sathyaprakash (2013) 304, 388  
 Savonije (2005) 252, 388  
 Sawyer (1944) 388  
 Sawyer Hogg (1973) 172, 388  
 Scaliger (1629) 11, 388  
 Scargle (1982) 17, 388  
 Schöller *et al.* (2014) 245, 249, 251, 388  
 Schönberg & Chandrasekhar (1942) 61, 388  
 Schönberner (1979) 65, 388  
 Schönberner & Drilling (1984) 33, 388  
 Schaefer (2010) 46, 388  
 Schatzman (1949) 46, 388  
 Schatzman (1956) 123, 388  
 Schmidt (2002) 209, 388  
 Schmidt, Rogalla & Thacker-Lynn (2011) 197, 388  
 Schneider *et al.* (2011) 33, 388  
 Schou *et al.* (1998) 143, 388  
 Schou, Christensen-Dalsgaard & Thompson (1994) 142, 388  
 Schuh (2008) 267, 388  
 Schuh (2010) 282, 388  
 Schuh (2012) 137, 256, 258, 389  
 Schuh *et al.* (2006) 265, 389

- Schwartz (1983) (*contd.*)  
 Schwartz (1983) 41, 389  
 Schwarz *et al.* (2007) 45, 389  
 Schwarzenberg-Czerny (1989) 17, 389  
 Schwarzschild (1900) 9, 389  
 Schwarzschild (1906) 54, 134, 389  
 Schwarzschild (1940) 158, 389  
 Schwarzschild (1941) 98, 100, 389  
 Schwarzschild (1958) 55, 389  
 Schwarzschild & Härm (1959) 115, 116, 389  
 Schwarzschild & Härm (1962) 62, 63, 389  
 Schwarzschild & Härm (1965) 64, 65, 102, 389  
 Schwarzschild & Härm (1970) 65, 389  
 Schweitzer & Vialle (2000) 6, 7, 389  
 Schwope (1995) 45, 389  
 Seaton (2005) 87, 389  
 Seaton & Badnell (2004) 121, 389  
 Seaton *et al.* (1994) 121, 389  
 Secchi (1867) 43, 389  
 Seidelmann & Urban (2010) 12, 389  
 Semkov & Peneva (2012) 41, 389  
 Sen (1948) 154, 389  
 Şenavcı *et al.* (2011) 36, 389  
 Serenelli, Maxted & Miglio (2013) 299, 389  
 Sesar *et al.* (2010) 164, 390  
 Sesar *et al.* (2011) 26, 390  
 Sesar *et al.* (2013) 174, 390  
 Shane (1958) 73, 390  
 Shapley (1914) 9, 73, 184, 390  
 Shapley (1916) 170, 390  
 Shapley (1918) 164, 172, 191, 390  
 Shapley (1939) 208, 390  
 Sharpee *et al.* (2002) 209, 390  
 Shelyag *et al.* (2011) 125, 390  
 Shibahashi (1983) 242, 390  
 Shibahashi (2003) 35, 390  
 Shibahashi (2005) 298, 390  
 Shibahashi (2007) 298, 390  
 Shibahashi & Aerts (2000) 249, 390  
 Shibahashi & Ishimatsu (2013) 44, 390  
 Shibahashi & Osaki (1976) 296, 390  
 Shiode *et al.* (2013) 126, 390  
 Shipman (2008) 27, 390  
 Shobbrook *et al.* (1969) 38, 390  
 Shore (2012) 48, 390  
 Shtykovskiy & Gilfanov (2007a) 47, 391  
 Shtykovskiy & Gilfanov (2007b) 47, 391  
 Siegel & Roth (2010) 129, 391  
 Siegel & Roth (2011) 129, 391  
 Sills & Pinsonneault (2000) 268, 391  
 Silva Aguirre *et al.* (2008) 63, 391  
 Silva Aguirre *et al.* (2010) 63, 391  
 Silva Aguirre *et al.* (2012) 152, 391  
 Silva Aguirre *et al.* (2013) 67, 68, 391  
 Silvotti *et al.* (2007) 14, 391  
 Silvotti *et al.* (2011) 282, 391  
 Simion *et al.* (2014) 174, 391  
 Simon (1971) 154, 391  
 Simon (1981) 121, 391  
 Simon (1982) 121, 391  
 Simon & Sastri (1972) 154, 391  
 Simon & Schmidt (1976) 154, 391  
 Simon *et al.* (2012) 33, 391  
 Sion (2012) 45, 392  
 Sion *et al.* (1983) 276, 278, 392  
 Sion *et al.* (2014) 276, 392  
 Sipahi *et al.* (2013) 211, 392  
 Skopal *et al.* (2012) 48, 392  
 Skrutskie *et al.* (2006) 16, 392  
 Sloan *et al.* (2010) 214, 227, 392  
 Smalley *et al.* (2011) 26, 234, 392  
 Smartt (2009) 41, 70, 71, 392  
 Smeyers & van Hoolst (2010) 131, 392  
 Smith (1977) 150, 251, 392  
 Smith (1982) 185, 393  
 Smith (1995) 166, 392  
 Smith (2000) 22, 164, 185, 392  
 Smith & Frew (2011) 4, 392  
 Smith & Karp (1976) 251, 392  
 Smith & McCall (1978) 251, 392  
 Smith & Wehlau (1985) 204, 206, 392  
 Smith *et al.* (1978) 203, 204, 392  
 Smith, Catelan & Clementini (2009) 164, 392  
 Smith, Catelan & Kuehn (2011) 164, 167, 392  
 Smolec & Moskalik (2008) 123, 393  
 Smolec & Moskalik (2010) 123, 393  
 Smolec & Moskalik (2012) 156, 393  
 Smolec *et al.* (2011) 171, 393  
 Smolec *et al.* (2012) 155, 202, 393  
 Smolec *et al.* (2013) 299, 393  
 Solheim (2010) 45, 393  
 Sollima *et al.* (2008) 102, 393  
 Sonoi & Shibahashi (2011) 116, 393  
 Sonoi & Shibahashi (2012a) 116, 393  
 Sonoi & Shibahashi (2012b) 116, 393  
 Sonoi & Shibahashi (2014) 261, 393  
 Sonoi & Umeda (2013) 117, 393  
 Soszyński *et al.* (2005) 221, 394  
 Soszyński *et al.* (2007) 221, 393  
 Soszyński *et al.* (2008a) 25, 26, 188, 189, 191, 193, 393  
 Soszyński *et al.* (2008b) 191, 200, 202, 205, 207–210, 394  
 Soszyński *et al.* (2009a) 181, 394  
 Soszyński *et al.* (2009b) 217, 221, 232, 394  
 Soszyński *et al.* (2010) 202, 208, 394  
 Soszyński *et al.* (2013a) 217, 394

- Soszyński, Wood & Udalski (2013b) 215, 222, 229, 394
- Southworth (2012) 30, 394
- Spruit & Ritter (1983) 47, 394
- Staff *et al.* (2012) 43, 394
- Stanghellini, Cox & Starrfield (1991) 121, 285, 286, 394
- Stankov & Handler (2005) 248, 249, 394
- Stanley-Jones (1948) 115, 394
- Starrfield (1971) 46, 394
- Starrfield *et al.* (1983) 282, 394
- Starrfield *et al.* (1984) 282, 394
- Starrfield *et al.* (1985) 282, 394
- Stauffer & Hartmann (1986) 37, 394
- Stebbins (1908) 10, 24, 395
- Stebbins (1910) 9, 24, 395
- Stein & Leibacher (1974) 131, 395
- Stellingwerf (1975) 176, 395
- Stellingwerf (1978a) 120, 121, 395
- Stellingwerf (1978b) 17, 395
- Stellingwerf (1979) 120, 242, 395
- Stellingwerf (1982) 154, 395
- Stellingwerf (1984) 154, 395
- Stellingwerf (2011) 17, 395
- Stellingwerf (2013) 154, 395
- Stello *et al.* (2008) 149, 395
- Stello *et al.* (2013) 152, 215, 395
- Stephenson & Green (2002) 1, 3, 395
- Stephenson & Morrison (2005) 11, 395
- Sterken (1977) 253, 395
- Sterken (2005) 18, 395
- Sterken, Broens & Koen (1999) 3, 395
- Sterken, de Groot & van Genderen (1996) 261, 395
- Sterken, Jerzykiewicz & Manfroid (1986) 38, 395
- Sterne & Campbell (1937) 228, 395
- Stibbs (1950) 34, 395
- Stix (2002) 61, 395
- Stobie *et al.* (1997) 268, 396
- Storm *et al.* (2012) 192, 396
- Stothers (1969) 231, 396
- Stothers (1980) 179, 396
- Stothers (2006) 171, 179, 396
- Stothers & Chin (1983) 41, 396
- Straniero *et al.* (2003) 283, 396
- Straniero, Gallino & Cristallo (2006) 65, 396
- Strassmeier (1999) 37, 396
- Strassmeier (2009) 34, 37, 396
- Strassmeier (2011) 34, 396
- Strittmatter & Norris (1971) 34, 396
- Strom *et al.* (1972) 40, 396
- Struve (1947) 168, 396
- Struve (1955a) 248, 396
- Struve (1955b) 248, 396
- Struve *et al.* (1957) 248, 396
- Stryker (1993) 38, 396
- Suárez *et al.* (2009) 143, 396
- Suárez, Bruntt & Buzasi (2005) 240, 396
- Sweigart (1971) 102, 396
- Sweigart (1987) 82, 102, 396
- Sweigart (1994) 63, 396
- Sweigart (1997) 102, 396
- Sweigart & Catelan (1998) 167, 396
- Sweigart & Gross (1978) 62, 397
- Sweigart & Renzini (1979) 177, 179, 397
- Sweigart, Greggio & Renzini (1989) 68, 397
- Sweigart, Greggio & Renzini (1990) 68, 397
- Swerdlow (1986) 5, 397
- Swope (1968) 208, 397
- Szabó (2014) 189, 397
- Szabó *et al.* (2010) 155, 171, 397
- Szabó *et al.* (2014) 168, 169, 397
- Szabados, Kiss & Derekas (2007) 209, 397
- Szczygieł, Pojmański & Pilecki (2009), 164, 397
- Szeidl *et al.* (2011) 179, 397
- Szewczuk, Daszyńska-Daszkiewicz & Dziembowski (2014) 245, 397
- Szkody *et al.* (2010) 275, 300, 397
- Szkody *et al.* (2012) 300, 397
- Szkody *et al.* (2013) 300, 397
- Takata & Saio (2013) 144, 397
- Talbot (1971) 116, 397
- Tammann & Sandage (1968) 261, 398
- Tammann, Sandage & Reindl (2003) 66, 67, 70, 398
- Tassoul (1980) 97, 134, 146, 398
- Tassoul (1990) 97, 398
- Tassoul & Tassoul (1968) 97, 398
- Tassoul, Fontaine & Winget (1990) 149, 288, 292, 398
- Tauris *et al.* (2013) 294, 398
- Tayar & Pinsonneault (2013) 125, 398
- Teays & Simon (1985) 209, 398
- Telting (2003) 150, 398
- Telting, Aerts & Mathias (1997) 249, 398
- Templeton (2004) 17, 398
- Templeton & Henden (2007) 200, 207, 398
- Templeton & Karovska (2009) 228, 398
- Templeton, Mattei & Willson (2005) 228, 229, 398
- Théado *et al.* (2009) 109, 242–244, 398
- Thackeray (1950) 208, 398
- Thomas (1967) 62, 398
- Thompson *et al.* (2003) 143, 398
- Thomson (1863) 130, 132, 398
- Thorne (1969) 302, 398

- Thorne & Ipser (1968) (*contd.*)  
 Thorne & Ipser (1968) 302, 398  
 Thoul *et al.* (2013) 245, 399  
 Tisserand *et al.* (2013) 42, 399  
 Tkachenko *et al.* (2012) 241, 399  
 Tkachenko *et al.* (2013) 233, 240, 241, 399  
 Tkachenko *et al.* (2014) 126, 399  
 Toutain & Fröhlich (1992) 146, 399  
 Townley (1915) 6, 7, 399  
 Townsend (2002) 252, 399  
 Townsend (2005a) 252, 399  
 Townsend (2005b) 248, 399  
 Townsend (2014) 146, 399  
 Townsend & MacDonald (2006) 122, 261, 399  
 Townsley, Arras & Bildsten (2004) 300, 399  
 Tremblay *et al.* (2013) 281, 399  
 Tsesevich (1966) 178, 399  
 Tsesevich (1969) 178, 399  
 Tuchman *et al.* (1993) 212, 399  
 Turck-Chièze & Couvidat (2011) 139, 399  
 Turner (1996) 183, 399  
 Turner (2009) 196, 399  
 Turner *et al.* (2005) 195, 400  
 Turner *et al.* (2013) 196, 400  
 Turner, Abdel-Sabour Abdel-Latif & Berdnikov (2006) 194, 195, 399  
 Turon, Luri & Masana (2012) 28, 400  
 Tuthill *et al.* (1994) 221, 400  
 Tutukov & Fedorova (2010) 35, 38, 400  
 Udalski (1990) 45, 400  
 Ulaczyk *et al.* (2013) 183, 400  
 Ulrich (1970) 131, 400  
 Ulusoy *et al.* (2013) 235, 240, 400  
 Unno *et al.* (1989) 107, 124, 131, 135, 136, 400  
 Ushomirsky & Bildsten (1998) 252, 400  
 Uttenthaler (2013) 227, 400  
 Uttenthaler *et al.* (2011) 229, 400  
 Uytterhoeven *et al.* (2011) 240, 400  
 Uzer, Noid & Marcus (1983) 139, 400  
 Väisälä (1925) 134, 400  
 Valcarce & Catelan (2011) 180, 400  
 Valcarce *et al.* (2014) 103, 401  
 Valcarce, Catelan & De Medeiros (2013) 57, 401  
 Valcarce, Catelan & Sweigart (2012) 103, 401  
 Valle *et al.* (2009) 69, 401  
 van Albada & Baker (1973) 176, 401  
 van Belle (2012) 38, 401  
 van den Ancker, de Winter & Tjin A Djie (1998) 40, 41, 401  
 van der Hucht (1992) 42, 401  
 van der Klis (1989) 47, 401  
 van Genderen (2001) 41, 259, 401  
 van Genderen *et al.* (1995) 261, 401  
 van Genderen, de Groot & Sterken (1997a) 261, 401  
 van Genderen, Sterken & de Groot (1997b) 261, 401  
 Van Grootel *et al.* (2010a) 268, 401  
 Van Grootel *et al.* (2010b) 402  
 Van Grootel *et al.* (2012) 281, 402  
 Van Grootel *et al.* (2013a) 268, 401  
 Van Grootel *et al.* (2013b) 293, 296, 402  
 van Leeuwen (1997) 28, 402  
 van Leeuwen (2013) 196, 402  
 van Leeuwen *et al.* (1997) 221, 402  
 van Leeuwen *et al.* (2007) 196, 402  
 Van Winckel, Duerbeck & Schwarz (1993) 48, 402  
 van Zyl *et al.* (2000) 300, 402  
 van Zyl *et al.* (2004) 300, 402  
 Vandakurov (1968) 146, 401  
 VandenBerg & Stetson (2004) 68, 401  
 VandenBerg *et al.* (2000) 57, 401  
 Vardya (1988) 228, 402  
 Vauclair (1975) 35, 402  
 Vauclair (2012) 152, 402  
 Vauclair (2013) 275, 402  
 Vauclair *et al.* (2002) 278, 402  
 Venumadhav, Zimmerman & Hirata (2014) 302, 402  
 Vican *et al.* (2011) 300, 402  
 Vilardell, Jordi & Ribas (2007) 74, 403  
 Vilhu & Kondo (1992) 38, 403  
 Vink (2012) 41, 260, 403  
 Vink *et al.* (2013) 42, 403  
 Vogel (1890) 8, 403  
 Vogt (1980) 45, 403  
 Vogt (1981) 37, 403  
 Vogt & Penrod (1983a) 246, 403  
 Vogt & Penrod (1983b) 37, 403  
 Vogt, Penrod & Soderblom (1983) 37, 403  
 von Zeipel (1924) 38, 403  
 Waelkens (1991) 251, 403  
 Wahlgren (1992) 214, 403  
 Walczak *et al.* (2013a) 251, 403  
 Walczak, Szewczuk & Daszyńska-Daszkiewicz (2013b) 252, 403  
 Walker & Hill (1985) 256, 403  
 Walker *et al.* (2005) 44, 246, 248, 403  
 Wallerstein (1970) 204, 403  
 Wallerstein (2002) 199, 404  
 Walraven, Walraven & Balona (1992) 236, 404  
 Walter & Bowyer (1981) 37, 404  
 Wareing *et al.* (2007) 226, 404

- Warner (1995) 45, 404  
 Warner (2003) 45, 46, 404  
 Warner & Robinson (1972) 280, 404  
 Warner & van Zyl (1998) 300, 404  
 Warner *et al.* (1972) 279, 300, 404  
 Warner, Kaye & Guzik (2003) 124, 242, 404  
 Waters & Waelkens (1998) 40, 41, 404  
 Watson, Henden & Price (2006) 22, 404  
 Watts (2012) 130, 302, 404  
 Webbink (1984) 49, 404  
 Webster & Allen (1975) 48, 404  
 Wehlau & Bohlender (1982) 207, 404  
 Weiss, Keady & Magee (1990) 121, 404  
 Welch (2012) 200, 203, 207, 404  
 Welsh *et al.* (2005) 159, 404  
 Welsh *et al.* (2011) 129, 404  
 Welty & Ramsey (1994) 38, 130, 404  
 Wende, Glatzel & Schuh (2008) 261, 405  
 Werner & Herwig (2006) 282, 285, 286, 405  
 Wesselink (1947) 187, 405  
 Wheatley *et al.* (2005) 159, 405  
 Wheeler, Sneden & Truran (1989) 57, 405  
 Whelan & Iben (1973) 49, 405  
 White *et al.* (2011) 146, 148, 149, 405  
 White, Baumgarte & Shapiro (2012) 38, 405  
 Whitelock & Feast (1993) 405  
 Whyte & Eggleton (1980) 47, 405  
 Wickramasinghe & Ferrario (2000) 45, 405  
 Williams & Saladyga (2011) 22, 406  
 Williams *et al.* (1990) 42, 405  
 Williams *et al.* (2012) 42, 405  
 Williams *et al.* (2013) 42, 291, 405  
 Willson (2000) 225, 406  
 Willson & Marengo (2012) 220, 227, 406  
 Willson & Templeton (2009) 211, 224, 227, 406  
 Wilson (2001) 30, 406  
 Wilson *et al.* (1986) 48, 406  
 Winget & Kepler (2008) 136, 142, 149, 156, 275, 292, 406  
 Winget *et al.* (1982a) 280, 287, 406  
 Winget *et al.* (1982b) 280, 406  
 Winget *et al.* (1991) 149, 286, 406  
 Winget *et al.* (1994) 289, 406  
 Winget *et al.* (2004) 282, 290, 406  
 Winget *et al.* (2009) 294, 406  
 Winget, Cochran & Endl (2003) 282, 406  
 Woźniak *et al.* (2004) 15, 26, 407  
 Wolf (1989) 41, 406  
 Wolf & Rayet (1867) 41, 406  
 Wolff (1972) 130, 406  
 Wolff & Wolff (1976) 35, 406  
 Wolszczan & Frail (1992) 14, 407  
 Wood (1974) 218, 407  
 Wood & Cahn (1977) 228, 407  
 Wood & Zarro (1981) 228, 407  
 Wood *et al.* (1999) 221, 407  
 Woodruff *et al.* (2004) 77, 407  
 Woosley & Bloom (2006) 49, 407  
 Woosley & Weaver (1986) 48, 49, 407  
 Woosley, Heger & Weaver (2002) 69, 70, 294, 407  
 Woudt *et al.* (2006) 267, 270, 271, 407  
 Wray, Eyer & Paczyński (2004) 217, 407  
 Wu & Goldreich (1999) 281, 407  
 Wu & Goldreich (2001) 293, 407  
 Wuchterl & Klessen (2001) 58, 59, 407  
 Wyatt & Cahn (1983) 77, 407  
 Xiong & Deng (2007) 219, 407  
 Xiong & Deng (2013) 219, 407  
 Xiong, Deng & Cheng (1998) 219, 407  
 Yi, Kim & Demarque (2003) 82, 408  
 Yi, Lee & Demarque (1993) 121, 408  
 Yoon *et al.* (2008) 167, 408  
 Yusof *et al.* (2013) 69, 408  
 Zahn (1970) 129, 408  
 Zahn (1975) 129, 408  
 Zahn (2008) 129, 408  
 Zahn, Talon & Matias (1997) 125, 408  
 Zavala *et al.* (2010) 32, 408  
 Zdravkov & Pamyatnykh (2008) 249, 250, 408  
 Zdravkov & Pamyatnykh (2009) 122, 251, 408  
 Zhang & Jeffery (2012) 43, 408  
 Zhevakin (1953) 10, 408  
 Zhevakin (1963) 74, 107, 119, 408  
 Zhou & Jiang (2011) 240, 408  
 Zhou *et al.* (1999) 235, 408  
 Ziebarth (1970) 115, 116, 408  
 Zijlstra & Bedding (2002) 229, 408  
 Zijlstra & Bedding (2004) 229, 408  
 Zima (2006) 150, 408  
 Zinn & Searle (1976) 209, 210, 408  
 Zinn & West (1984) 102, 409  
 Zinn *et al.* (2014) 174, 408  
 Zinn, Newell & Gibson (1972) 309, 408  
 Zoccali *et al.* (2006) 57, 409  
 Zorotovic *et al.* (2010) 176, 409  
 Zsoldos (1994) 4, 6, 409  
 Zsoldos (1995) 212, 409  
 Zsoldos (1998) 211, 409  
 Zwintz *et al.* (2013) 236, 240, 409

























