

## Index

- achromatic lens 30, 31  
 ages, astrological 19  
 aluminizing 40  
 angular distance 3  
 aperture masks 112  
 apochromatic lens 31, 33  
 apodizing screens 77  
 arcminute 18  
 arcsecond 18  
 association 10, 268  
 astigmatism 10  
 asteroid belt 5, 215  
 asteroids  
   astrometry 216  
   designations 216  
   photometry 108, 217  
   types 215  
 astigmatism  
   eye 112  
   objective 37  
 astronomy clubs 144  
 astronomy vacations 146  
 astrophotography  
   all-sky 98–9  
   cameras 88  
   digital 100  
   exposure times 94  
   eyepiece projection 98  
   field of view 88  
   film  
     black-and-white 90  
     color 90  
     hypersensitization 89  
     processing 91  
     travelling with 92  
   piggyback 95  
   through the telescope 96  
   tripod mounted 93  
   video 101  
 aurora 164  
 averted vision 112  
 Baily's Beads 175  
 Barlow lens 50  
 batteries 73, 112  
 binocular mounts 81–2  
 binoculars  
   aperture 78  
   exit pupil 79  
   eye relief 79  
   image stabilized 81  
   magnification 78  
   mechanics 78  
   optics 78  
 binoviewer 51  
 caffeine 113  
 Caldwell catalogue 133  
 CCD  
   bias frame 104  
   binning 106  
   chips 104  
   dark frame 104  
   drift scanning 106  
   flat field 104  
   integration time 106  
   operation 103  
   pixel scale 106  
   quantum efficiency 104  
   stacking images 105  
 celestial sphere 16, 17  
 Ceres 5, 215  
 Charon 214  
 chromatic aberration 30  
 chromosphere 156, 158, 176  
 circumpolar 20  
 Clark, Alvin 9, 31, 241  
 cold weather 113, 122  
 collimation 37, 38  
 color index 26  
 comets  
   brightest 219  
   brightness factors 220  
   degree of condensation 220  
   discovering a comet 221  
   magnitude estimates 220  
 constellations 10  
 coordinate systems  
   altazimuth-azimuth 17  
   ecliptical 20  
   equatorial 18  
   galactic 20  
   latitude 16  
   longitude 16  
 Coordinated Universal Time 22  
 corona 159  
 dark adaptation 113, 150, 260  
 declination 18, 19  
 de Vaucouleurs, Gerard 279  
 dew removal systems 74  
 diamond ring 175  
 digital setting circles 43  
 double stars  
   colors 240  
   formation 238  
   position angle 239  
   types 238  
 Dramamine 113  
 eclipses  
   annular 174  
   imaging 173  
   lunar 171–3  
   partial 174  
   photography 176  
   solar 173  
   total 175  
 ecliptic 3, 18  
 equinox 18  
 exit pupil 48  
 eye fatigue 112  
 eye patch 114  
 eyepieces 46–51  
 field fractions 114  
 field stop 50  
 filters  
   color 53  
   hydrogen alpha 68–9  
   light pollution reduction 55  
   Moon 54  
   nebular 55–6  
   neutral density 54  
   polarizing 54  
   solar 67  
 finder scopes  
   single-power 70  
   standard 71  
 fireball detection network 232  
 focusers 76  
 footwear 115  
 galaxies  
   catalogs 285  
   classification 278  
   clusters 281  
   observing tips 275–6  
   superclusters 284  
 Galileo, Galilei 24, 30  
 gegenschein 115  
 Global Positioning System 22, 44  
 globular clusters 270–4  
 GoTo drives 44  
 Great Red Spot 196  
 Greenwich Mean Time 22  
 Hargreaves strut 45  
 Herschel 400 132  
 Herschel, John 23, 132, 215  
 Herschel, William 24, 32, 132, 180, 183, 188, 203, 209, 261  
 high altitude observing 115  
 Horsehead Nebula 56, 64, 260  
 Hubble, Edwin 278  
 Hubble tuning fork diagram 278  
 image processing 92, 116  
 International Astronomical Union 22, 224  
 internet  
   chat groups 146  
   e-groups 144  
   news groups 145  
 intoxication 116

- Julian date 23
- Jupiter  
 atmosphere 196  
 Great Red Spot 196  
 observing 198  
 satellites 197, 199–201
- Kuiper Belt 5, 216
- laser eye surgery 116
- light pollution 55, 150
- limiting magnitude 24, 26, 81, 130
- Lippersphey, Hans 30
- Local Group 282
- Lowell, Percival 181, 188–9
- lunar meteorite impacts 233
- magnifiers 73
- Mars  
 atmosphere 189, 192  
 canals 188–9  
 dust storms 192  
 observing 191  
 polar caps 190  
 satellites 190  
 surface features 190
- Mars Previewer II 191
- Mercury 180–2
- Messier marathon 130–1
- meteor showers 226–30
- meteors  
 colors 228–9  
 radio detection 231
- mirror coatings 41
- Moon  
 formation 166  
 imaging 169  
 observing 168–9
- phases 168
- mosquitoes 117
- mounts  
 altazimuth 42  
 backlash 44  
 digital setting circles 43  
 Dobsonian 42  
 equatorial 42–3  
 precision error  
 correction 45  
 stability 44
- Near-Earth Objects (NEOs) 215
- nebulae  
 bright 256, 258  
 dark 257, 260  
 emission 256  
 reflection 257
- Neptune 210–12
- New General Catalog (NGC) 133
- observatories 138–43
- observing alone 118
- observing awards 118
- observing chairs 72
- observing lists 119
- occultations  
 grazes 254  
 tips 254  
 videotaping 255
- occluding bar 50
- open clusters  
 classification 268  
 list of bright clusters 271
- optics, cleaning 38–40
- Paracorr 33, 51
- photometry 108, 217
- photosphere 156–8
- planetary nebulae  
 classification 262  
 colors 261–3  
 history 261  
 in clusters 263  
 nicknames 265–6
- Pluto 212–14
- polar alignment 42–3
- power supplies 73
- prescription painkillers 120
- recorders 120
- reticule 71, 97–8
- Saturn  
 atmosphere 206  
 ring plane crossings 205  
 rings 202–7  
 satellites 206
- SCT coolers 75
- seeing 122
- shadow bands 175
- Shoemaker–Levy 9 197–8
- sidereal time 21
- Sirius B 241
- sketching 84–7
- sky brightness 26, 120–1
- solar flares 159
- spectroscopy 109–10
- star diagonals 49–50
- star parties 146–9
- storage cases 73
- Strehl ratio 31, 36
- Sun  
 composition 157  
 energy production 156  
 interior 156  
 observing 160–1  
 solar cycle 157  
 sunlight 121  
 sunspots 159–63  
 supernova 250–3
- T-adaptor 96
- telescope covers 74
- telescopes  
 catadioptric 34  
 Maksutov 35–6  
 reflecting 32–3  
 refracting 30–1  
 Ritchey–Chretien 34  
 Schmidt  
 tents 121
- Tombaugh, Clyde 212–4
- transits  
 of Mercury 177–8  
 of Venus 178–9
- Triton 212
- tube currents 75, 121
- Universal Time 21–2
- Uranus 209
- variable stars  
 designations 245–6  
 history 245  
 types 246–7
- Venus  
 ashen light 185  
 history 182–4  
 observing 184–5
- vitamin A 121–2
- winter observing 122
- Z  
 zodiacal light 123