

SUBJECT INDEX

<u>A</u>	
Absolute magnitudes	13, 20, 91
cluster main sequence	
fitting	<u>147</u>
Geneva photometric system	277, 280
giant branch	14
K giants	431
LMC OB stars	<u>259</u>
luminosity classification and calibration	5, 49, 259-60, <u>421</u> , <u>429</u> , 433
M giants	<u>34</u> , 431
O stars	6
photometric solar	101, 109, 293, 298-9
statistical parallaxes	89
trigonometric parallaxes	<u>49</u> , 52-3, 393
trigonometric parallaxes	79, 98, 101, 130, 313, 319
white dwarfs	122, 133-6
WN 7 stars	369
Abundance	<u>163</u> , <u>195</u>
barium	169-72, 206, 396-7, 405
CH	159, 396
CN	159, 396, 398, 405
CNO	167-8, 173-6, 178, 180-1, 202, 206, 223, 225, 227, 269, 273, 335-6, 338, 369, 396- 7 400-1, 405
calcium	168, 182, 185, 193
carbon	159, 173, 204, 363, 374
helium	12, 52, 113, 124, 126, 151-2, 154, 164, 173-6, 178, 180-1, 183, 190, 193, 220- 2, 225, 235, 237, 240, 269, 273, 314- 16, 321-2, 334-6, 343-5, 364, 369, 372, 374-8, 381, 392, 396- 7, 399, 401, 403, 406, <u>433</u> , 434-6
hydrogen	257, 339, 369, 374
iron	286, 384-5, 396-7, 400
iron peak	17, 19, 158-9, 167- 8, 181, 206, 273-4, 396-7, 406
metal abundance (including heavy elements)	9, 22, 34, 36-9, 50, 53, 89, 101, 107, 109, 111-2, 124, 145, 147, 151-2, 154, 158- 9, 161, 164-6, 168, <u>169</u> , 170-82, 184-90, 192-4, 205-6, 209, 215, 219-20, 225-6, 230, 233-4, 240-1,
Abundance (cont'd)	
metal (cont'd)	248, 269-70, 273, 280, 285, 297, 299, 313-7, 319-21, 334, 345-6, 359, 375-9, 396-8, 400- 1, 405, 423, 426, 434-5, 445, 452
metallicity and cluster age	164-5, 170, 177-8, 314, 316-7, 396, 405
metallicity and galacto-centric distance	164-6, 177-9, 182, 396, 398, 405
metallicity - [Fe/H]	37, 89, 164-5, 170-3, 176-82, 184-90, 192, 194, 209, 269-70, 280, 299, 313-6, 319-20, 397-8, 400, 405, 434
metallicity - Preston's ΔS	50, 53-7, 168, 185, 187, 233-6, 394
nitrogen	8, 12, 128, 168, 200-1, 204, 227, 352, 363, 380, 392, 397, 403, 405
primordial, in clusters	164, 166-7, 178, <u>195</u> , 202-3, 205-6, 218, 348, 406
silicon	286
sodium	22
strontium	397, 406
titanium	22
Age	<u>163</u>
Alpha process	<u>167</u> , 397
Amplitude	
interferometry	66
Anglo-Australian Telescope	405
Angular diameter stellar	65-9, 76, 281-2, 284, 400, <u>447</u> , 448-9
Arecibo Observatory	257
Arnett type supernova	375
Arp pairs	253
Atmosphere, model calculations	
Bell and Gustafsson	379-80, 403
Johnson, H.R.	381
Kurucz	209, 219-20, 229, 294, 381, 443-4
Lambert and Luck	381
Mihalas	219
Mould	112, 405, 454
Osmer and Peterson	219
Peytremann	294
Tsuji	390
Auer-van Blerkom effect	372

B

Baade's Field IV 265
 Baade's window 33
 Balmer
 continuum 134, 139, 141, 395
 jump 30-1, 69, 113, 141, 321, 329, 443
 lines 6, 30, 88, 90, 128, 134, 136, 156, 158, 185, 259, 371-2
 emission in 21, 88
 strength of 6, 30-1, 89-90, 128, 134, 136, 145, 158, 185, 193, 259-60, 369-72, 443
 series 369-70
 progression 371-2
 Blanketing, line 42, 48, 90, 109, 132, 220, 229-30, 233, 240, 285, 388, 403-5, 439
 Blocking, band 112
 Blocking, line 10, 22, 107, 132, 380, 388, 405
 Bolometric, correction scales 20, 65, 66-74, 111-2, 194, 223, 319, 379
 Boltzman plasma 325
 Brashear spectrograph 418
 Bruce survey 63, 418

C

CN bands 36, 158, 164, 166, 180, 197, 199, 205-6, 227, 423, 453
 CNO processing 8, 200-2, 204-5, 364, 369, 380, 397, 403
 Calcium II, H and K lines 24, 44, 59-60, 62, 84, 103, 109, 161, 185, 187, 195, 212, 394
 Calibration
 absolute 65
 Carbon burning 350-1, 353-4, 357, 376, 403
 Carnegie image tube 260
 Carson opacities 237, 362, 368, 402
 Cepheids 229, 237
 mass discrepancy 231-2, 236-7, 240, 406
 period radius relation 241-3
 pulsation modes 230-3, 237, 238, 240, 399, 406
 Cerro Celán Observatory 139
 Cerro Tololo Inter-American Observatory 32-4, 38, 64, 91, 177, 191, 209, 260
 Chandrasekhar limiting mass 303
 Chromospheres, stellar 20, 59

C (cont'd)

Clusters 156, 249, 276, 317-8, 344, 353, 396, 413
 ages 156-7, 163, 164-6, 173, 178, 225, 269, 317, 338, 345-6, 398
 age spreads, in young 4, 353
 associations 139, 353
 Ara OB1 143
 globular 163-4, 166-7, 169-72, 173, 175-7, 183-4, 188, 195, 202, 209, 223, 247, 269, 271, 273, 317, 330, 335-6, 344-7, 380, 396-7, 413, 434
 Omega Centauri 183, 195, 205
 color gradient 195, 199
 evolution of stars 225
 evolution of intergated colors 345
 halo 177, 178, 181
 morphology of HR diagrams 173-6, 225, 398
 47 Tuc 195
 Hyades 39, 151
 c₁ anomaly 146, 219
 convergent point solution 40, 153
 sequences in HR diagrams 39, 45, 89, 151-4, 164, 215, 285, 405
 stars 39, 89-90, 107-8, 129, 134, 136, 146, 154, 391, 393, 426, 430
 main sequence fitting 147, 154, 260, 317, 396, 429
 membership 40, 129, 369, 441
 NGC 6231 147
 NGC 6475 159
 old disk 163
 open 145, 155, 159, 441
 Coma stars 89, 159
 89-90
 Hyades see Clusters, Hyades
 Pleiades stars 146, 154
 Praesepe stars 247, 158
 Color luminosity diagram 79
 Convective core 351, 357
 envelope 339, 350, 352-3, 360
 instability criterion 353, 357-60, 364, 402
 Copenhagen Observatory 433
 Crystallization sequence 133
 Curve-of-growth 172, 174-5, 185-6, 194, 384

<u>D</u>		<u>G</u> (cont'd)	
Damping	380, 403	Galactic rotation	55, 144, 430
Degeneracy	334-5, 350, 357	Galaxies	177
Diffusion	9, 128, 155-6, 375	ages	<u>247</u>
Distance scale	<u>53</u>	classification	
Distance moduli		Hubble sequence	247, 252
clusters	145, 279	van den Bergh	252
Coma cluster	279	Yerkes	252
galactic center	56	coalescence	257
Hyades cluster	40, 45, 89, 136, 146, 148, <u>151</u> , 152-4, 164, 232, <u>260</u> , 262, 277-8, 282, 396	colors	250-2, 254, 257, <u>345</u> , 347
LMC	56, 259, 262	in color magnitude	
Magellanic clouds	34	diagrams	257, 399
NGC 752, 6475, 7092	279	dwarf, morphology of	
Pleiades cluster	260-1, 279	HR diagram	265, 269
Praesepe cluster	<u>277</u> , 278-9	evolution	<u>247</u> , 255, <u>345</u> , 347
SMC	<u>56</u> , 262	formation	252
Scorpio Centaurus		HR diagram	<u>247</u> , <u>263</u>
association	262	initial mass function	
Ursa Minor dwarf		(IMF)	248-50, 345, 378, 399, 402
galaxy	270	integrated properties	247-55, 257, 333, 345, 347, 399, 402
Dominion Astrophysical		luminosity evolution	348
Observatory	48	M/L	348
Doppler broadening		metallicity	247-52, 255
velocity	380-1, 403	metallicity gradients	252
Draper catalogue	94	Milky Way	see Milky Way in Object Index
Draper stars	91, 394	star formation rate	
<u>E</u>		(SFR)	249-51, 399
Eclipsing binary	283, <u>433</u>	stellar age distrib-	
evolutionary tracks	see HR diagram	ution	248, 255
Eddington flux	117	tidal disruption	257, 274
Eddington-Sweet currents	327	types	
Effective temperatures	<u>65</u>	anemic spirals	253, 400
Ekman Layer	327	cD disk	257
Energy distribution,		disk	254
stellar	67, 69, 117- ^a , 126, 139, 220, 394, 423, 426, 444	dwarf	177, 182, 400
European Southern		dwarf ellipticals	269
Observatory	50, 423, 433	elliptical	247, 249-54, 257, 345, 347, 399
Evolution		extreme dwarf	251
cluster	<u>225</u>	interacting	253-4, 257
galactic	<u>247</u>	irregular	247, 257
stellar	<u>323</u> , <u>333</u> , <u>349</u> , <u>357</u> , <u>369</u>	ring	253
<u>F</u>		S0	250, 252, 254, 257, 399-400
Fermi interaction	352	spiral	247, 250-3, 257, 399
Fernie-Hube distance		Gliese's catalogue	438
scale	282	Gradient, ultraviolet	140-1
Flares, stellar	283	<u>H</u>	
Fourier techniques	23	HR diagram	
<u>G</u>		Branches or sequences in	
Galactic chemical		asymptotic branch	196-9, 341, 346, 397- 8, 406
evolution	375-8	Cepheid instability	
Galactic halo	53, 269	strip	20, 231, 237
Galactic kinematic		degenerate	63, 86, 101, <u>121</u> , 129, 131, <u>133</u> , <u>437</u>
model	49	giant branch	3, 16, 119, 168, 190, 195-9, 205-6, 218, 228,

H (cont'd)

HR diagram (cont'd)

248, 273, 329, 333-9,
343, 346, 360, 397-8,
401
horizontal branch 190, 195-9, 216, 218,
228, 235-6, 269-71,
328, 333, 335, 341,
343, 346, 348, 397-8
main sequence 101, 130-1, 140, 147-
8, 151-4, 163, 226,
228, 328, 333 378, 396,
402, 405, 423
RR Lyrae instability
strip (gap) 57, 180, 220-1, 270,
344, 398, 400
subdwarf 129
subgiant 380, 397, 491
subluminous 132
supergiant 359-65, 368, 402
T zams 151-3
turnoff 248-9, 334, 336-8, 396-
7, 399
Zero age horizontal
branch 194, 221, 222-4, 228,
238, 328, 334
ZAMS 4, 107, 112, 151-4,
156, 163, 211-12, 313-
4, 321, 329, 333, 396,
416, 427, 429, 445
comparison of theo-
retical and obser-
vational 216-7, 313, 314-6, 387
cooler stars 13
evolutionary tracks 190, 209, 235, 267,
313, 333, 344, 356;
359
forms
forms of observa-
tional 16, 18, 44-6, 82-5,
92-3, 96, 102, 106,
108, 110, 113, 149,
164-5, 170, 184, 189,
270, 283, 313, 315,
321, 417
forms of theoret-
ical 122, 134-5, 151, 189,
216-7, 222, 224, 232,
239, 304, 308, 313,
315, 321, 328, 336-8,
342
funneling effect in
giant region 383, 387
intrinsic dispersion
giant branch 14, 168, 183-4, 188,
192, 204, 205, 218,
393, 398, 406
horizontal branch
main sequence 218, 225-7, 398-9, 406,
39, 41, 80-1, 147, 362-
3, 393
isochrones 164, 215, 313, 333,
344-5, 441

H (cont'd)

HR diagram (cont'd)

lifetime
horizontal branch 335, 341, 343, 402
main sequence 357
loops in 356, 359
morphology
giant branch 177, 183, 205, 339,
346, 397, 401
horizontal branch 173, 176-8, 181, 221,
225, 269-71, 336, 341,
346, 397-8
subgiant branch 180-1
nearby stars 79, 82-7, 94, 96, 394
new kind 281
second parameter
in globular
clusters 173, 225, 398
slope of sequence 42, 105, 154
star density in 13, 91-3, 96, 101, 155,
195
statistical 13, 15, 17, 39, 40, 43-
6, 63, 79, 81-6, 91,
92-4, 96-7, 101, 102-13,
394
supergiant blue/red
ratio 264, 349
upper left of 5, 392
Hale Observatories 59, 86, 112
Hamada-Salpeter mass-
radius relation 122
Hamburg-Cleveland
survey 30, 32
Hanbury Brown angular
diameters 66
Hauck Mermilliod
catalogue 445
Hayashi track, line 36, 304-5, 360-1, 364-
5, 368, 387
Hayes Latham flux
calibration 118
Hejlesen models 307-8, 362
Helium burning,
core 157, 267, 334, 349-50,
357, 359-61, 363-5,
369, 373-4, 385
core flash 202, 336, 341, 397, 401
shell 157
shell flash 202, 356, 397
Henyey determinant 307-8, 362
Herbig emission stars 427
Hess diagram 13
Hoag Prism 37
Horizontal branch see HR diagram
Horizontal branch,
zero-age (ZAHB) 221, 328, 334
Horizontal branch
stars 220-1, 225, 235
blue metal-rich
masses 219
406
Hubble sequence 247, 252

H (cont'd)

Hydrogen burning 204, 350, 352, 357, 359-64, 369, 372, 374, 378, 385, 397, 401, 405-406

I

Initial mass function, stellar 123, 202, 345-6, 378
 Interstellar extinction 50, 55-6, 65, 126, 145, 281, 289-90, 319, 380, 400, 403, 424-7
 Interstellar lines 24
 Interstellar reddening 25, 30, 55, 126, 140, 145, 163, 212, 229-30, 233, 250, 266, 293-5, 299, 400, 445, 452

K

K line photometry 161
 Kavalur Observatory 25-6
 Kelvin-Helmholz time scale 326
 Kitt Peak National Observatory 4, 155, 173, 175, 177, 209, 270

L

LTE 380
 non-LTE 383, 386
 Landau-diamagnetic susceptibility 325
 Landolt-Börnstein tables 91
 Late evolutionary phase stars 349
 Ledoux criterion 267, 364, 402
 Leiden Observatory 40
 Leiden Southern Station 229
 Lick Observatory 103, 107, 116, 154, 417
 Lick proper motion 154
 Limb darkening 65-7, 284
 Line blanketing 48, 229
 Line blocking 10, 22, 48, 132
 Log g diagram 209, 443
 Log T_{eff} diagram 209, 313, 443
 Long-period variables 18 cm OH maser emission 36
 Lowell Observatory 67, 101, 419
 Luminosity calibration 259, 429
 function 64, 143, 319, 335, 340, 344-5, 401-2, 437
 Lunar occultation 66, 76, 281, 447, 448-9
 Lunar Planetary Lab 419
 Lutz Kelker correction 41, 116
 Luyten surveys 63, 103
 Luyten catalogue 440
 Lyman continuum 65-6, 69

M

Macroturbulence 386
 Magellanic Clouds distance modulus 259, 262
 large 25, 259
 metal deficiency 9
 Magellanic plane 269, 271
 Magnetic fields, stellar 323, 324-7, 329-30, 401
 Magnetic mixing 323
 Magnitudes, absolute 49, 147
 also see parallaxes, trigonometric-statistical corrections
 Main sequence see HR diagram
 Malmquist correction 14, 116
 Maser-emission, 18-cm see long-period variables
 Mass 117
 Mass loss 8-10, 20, 119, 123, 193, 225, 226, 228, 248, 255, 267, 329, 345-6, 348, 352, 354, 356-7, 363-5, 370, 374, 376, 378, 392, 394, 398, 402-3
 Mass exchange 8-10, 369, 374, 392
 (incl. mass transfer)
 Mass luminosity relation 231, 238
 Mauna Kea Observatory 157
 Maximum likelihood, principle of 49, 52-3, 55, 241
 McCormick objective prism survey 438
 McDonald Observatory 417-8
 Mengel-Gross models 228
 Mestel cooling relation 439
 Metal abundance 167, 169
 Metal poor 273
 Metallicity and age 170, 316, 396, 405
 and galacto-centric distance 165, 177, 182, 396
 [Fe/H] 398, 405
 37, 89, 164, 170, 172
 -3, 176-7, 184, 209, 270, 280, 299, 315, 319, 397, 405, 434
 50, 168, 185
 ΔS
 Michelson-Pease angular diameters 66
 Michigan Spectral Catalogue 91
 Microturbulence 230, 383, 384-6, 390, 403
 Milky Way Galaxy anticenter 37, 53
 center 53, 56-7, 394, 413
 nuclear bulge 34, 37-8
 Mixing 9, 157, 167, 169, 178, 195, 198, 201, 204-6, 218, 248, 255, 323, 352, 357-8, 364, 375, 392, 397-8, 401-2

M (cont'd)

Mixing length 153, 338, 344, 359,
361, 378, 396, 401,
405
Morphology 173, 221
Morton Adams ZAMS 4
Mount Hopkins Obs. 423
Mount Stromlo Obs. 144, 196
Mount Wilson Obs. 209
Mount Wilson system 430-1

N

Neon burning 351
Neutrino energy losses 267, 341, 351-2, 375,
401-2
Novae 262, 283
Nuclear reaction rates 375
Nucleosynthesis 135, 167, 178, 323,
325, 328, 349-52,
354, 375, 376-8, 402

O

Objective prism spectra 29
Oblique rotator model 9
Opacity 146, 237, 359, 362,
368, 381, 386, 396,
402, 405

P

Palomar Observatory 67, 390
Palomar survey 63, 103, 269, 438-9
Parallax
 photometric 79, 191, 400, 413
 spectroscopic 13, 23, 393
 statistical 49, 53, 57, 191, 235,
393, 429, 430-32
 trigonometric 13-4, 39, 41, 64, 79,
81-4, 88, 98, 101-4,
107, 116, 120, 122,
129-31, 133-4, 136,
154, 261, 276-7, 280,
313, 317, 319, 393-4,
413, 417, 419, 429,
431
 trigonometric -
 statistical
 corrections 14, 41, 80, 107, 116
Parkes Observatory 36
Paschen continuum 134
Perseus arm 265
Photometric systems 183, 293
 Barbier-Morguleff 285
 CO band 173
 DDO 163-4, 196-7, 202, 398
 Geneva 277, 280, 285-6, 299-
 300, 319-22, 400-1,
 426
 H beta 434
 HD mag. 94-5, 98
 Mendoza $\alpha(16) \lambda(9)$ 289-90

P (cont'd)

Photometric systems (cont'd)
 multicolor 319
 multichannel spectro-
 photometer 86, 101, 124
 narrow band 451
 Piccirillo eight
 color 411
 RI 22, 39, 41, 103
 spectrum scanner 120, 139, 423-6
 six-color Stebbins
 and Whitford 69, 433-4, 443, 444-5
 Strömgren four-color 50-1, 103, 112, 122
 -4, 134, 140-1, 145,
 161-2, 209-15, 219,
 285, 398, 421
 thirteen color-
 Johnson and Mitchell 289
 UBV 29, 40, 69, 86, 103,
 121-2, 163-4, 196,
 198, 205, 250-2,
 254, 276, 389-99, 406
 UBV plus infrared
 (UBVr, UBVRi, UBVRiJK,
 etc.) 22, 33-4, 39, 41,
 66-7, 111, 143, 270,
 282, 289, 393, 400,
 427
 ultraviolet satellite 66, 76, 112, 125,
 126-8, 286
 Vilnius 293-5, 297-300, 400
 VILGEN 300
 Walraven 229-31, 381, 399
 Washington broad-band 177, 180, 182
 Wickramasinghe and
 Strittmatter 133, 136
 Wing and White eight
 color 451-3
Pleiades distance
 modulus 260-1, 279
Population
 halo 14, 21, 22, 43, 105,
 107, 163, 345, 406
 integrated colors 248, 345
 metal poor 345
 old disk 14, 21-2, 43, 105,
 107, 454
 stellar 33, 43, 57, 101, 105,
 247-52, 263, 273,
 345, 393, 399, 445
 young disk 22, 43
Population indicators 33
Pretoria Observatory 37
Proper motion 40, 48, 63, 64, 101,
112, 394, 405, 413,
417, 429, 437-40
Proper motion, reduced 63-4, 103, 121, 394,
405
Pulsation theory,
 stellar 192, 194, 234, 344,
357

R

RR Lyrae stars
 absolute magnitude 53-6, 191, 270
 helium abundance 57, 343-4
 kinematic parameters 53-6
 mass discrepancy 223
 Oosterhoff groups 188, 194, 234
 period frequency statistics 188-9, 344
 period radius relation 57, 241-3
 Racine wedge 270
 Radcliffe Observatory 144
 Radial velocities 413, 429
 Rayleigh-Taylor instability 240
 Redshift, gravitational 283
 Rossland mean opacity 388
 Rotation 323
 core 225
 stellar 7, 12, 145, 147, 152, 155-6, 225, 226-8, 285, 319, 323, 329-30, 396, 398, 401, 427
 Royal Greenwich Obs. 55

S

S-process 157, 159, 167, 169, 172, 325, 336, 401, 406, 411
 Salpeter birthrate function 376, 403
 Schulz method 122
 Schönberg-Chandrasekhar limit 304-6, 308
 Schwarzschild, K, velocity distribution 49
 Schwarzschild, M, criterion 267, 364, 402
 Semi convection 335, 341, 343, 357-9, 362, 376, 378, 402
 Shells, circumstellar 7-8, 20, 59-60, 139, 156, 395, 427
 Siding Springs Obs. 196, 202
 Silicon burning 350
 Solar constant 69
 Solar neighborhood 39, 41, 53, 96
 Space densities C and M supergiants 36-7
 Space motion, stellar 42, 101, 132, 413, 415, 417
 Speckle interferometry 66, 282, 390
 Spectra extended atmosphere phenomena 6, 381, 387
 sphericity effects 381, 387, 388-90, 403
 synthetic 159, 172, 204, 379, 403

S (cont'd)

Spectral classification systems
 Ake for S stars 409, 410-12
 Boeshaar for M dwarfs 17, 21-2, 109-11, 419
 Computer, slit spectra 23, 24, 393
 Computer, objective prism spectra 29, 393
 Henry Draper 30
 Keenan for S stars 409-10
 MK 3-5, 13-4, 23-4, 30, 59, 80-1, 84, 86, 91, 141-2, 147-8, 155, 157, 259-62, 294-6, 322, 389, 391-4, 419, 423, 426-7, 429-31, 449, 453
 Mt. Wilson 430-1
 Paris 30, 140
 Photometric 142
 Photometric, M stars 451, 452-4
 Star types
 A 3, 30, 69, 93-4, 146-7, 161-2, 217, 226, 229, 249, 254, 263-4, 294, 328, 391, 398, 400, 427, 443
 abnormal A type 289
 Am 155, 156, 161-2, 285, 286, 289, 293, 396, 400, 405
 Ap 155, 156, 285, 286, 289, 293, 323, 325, 328, 396, 400
 BL Her 186, 342
 BY Dra 86
 B 3, 5, 12, 24, 30, 51, 69, 94, 144, 146-7, 249, 254, 262-4, 294, 328, 391, 421, 427, 434, 436
 BaII 16, 62, 157, 159, 172, 204, 299, 398
 Be 7, 12, 293
 Binary (including duplicity) 7-9, 12, 48, 79, 86, 104, 118-9, 144-5, 153-6, 163, 262, 277, 293, 319, 369-70, 372, 374, 394, 400, 406, 438-9
 eclipsing 67, 76, 283, 400, 453
 Blue 25
 CH 172, 195, 398
 CN 172, 195
 Carbon 33, 36-7, 393, 409, 429, 430
 Cepheids 20, 59, 229, 230-3, 236, 237, 282, 349, 353-4, 399-400, 406
 Cool 13, 447

S (cont'd)

Star types (cont'd)

degenerate see white dwarfs
 273
 disk, metal poor
 disk, old 86, 105, 254, 273,
 313, 317, 378, 395,
 400
 dwarfs, red
 early-type 39, 42, 248, 299
 31, 215, 443
 F 3, 30, 60, 94, 146,
 217, 226, 229, 249,
 254, 263, 267, 294,
 313, 391, 398, 429-
 30, 436, 443
 field 39, 169
 flare 85, 104, 394
 G 3, 94, 103, 229, 263,
 267, 294, 313, 391-2,
 429-30, 447
 giant 13, 62-3, 81, 169,
 297, 397
 A 3, 295, 444
 B 3
 clump 157
 F 4, 295, 429, 444
 G 4, 157, 158, 257, 379,
 383, 384, 386, 396,
 403, 429
 K 66-7, 71, 74, 93, 157,
 158, 379, 383, 384,
 386, 396, 403, 429,
 452-3
 late type 387
 M 34, 38, 66-7, 71, 74,
 249, 257, 429
 O 260
 red 14-5, 62, 175, 177,
 196, 199, 225-6, 248
 254, 273, 293, 324-5,
 363, 387, 399, 409
 halo 21, 86, 105, 169, 254,
 273, 313, 315, 393,
 395, 397, 400, 405
 high velocity 22, 42, 48, 63, 103,
 105-7, 109, 273, 404,
 413, 414-6
 horizontal branch 173, 196, 199, 209,
 210, 213, 216, 218-21,
 223-5, 235, 299, 328,
 398
 blue metal rich 219
 K 94, 103, 294, 313,
 394, 429-30
 K dwarfs see main sequence
 late type 429
 low velocity 42, 107-8
 luminous 59, 263, 421
 M 33, 37, 94, 103, 294,
 392-3, 429-30, 451,
 452-4
 dMe 84, 88, 394-5
 main sequence 8, 21, 39-41, 50, 62,
 64, 67, 70-3, 80-1, 93,
 102, 126, 225, 228,

S (cont'd)

Star types (cont'd)

249, 289, 297, 299,
 317, 330, 399, 429,
 454
 A 93, 295, 392, 444
 B 8
 F 42, 79-81, 90, 93-4,
 97, 147, 295, 405,
 413, 444
 G 42, 79-81, 90, 94,
 101, 395, 405, 423,
 424-6
 K 39, 42-3, 67, 80-1,
 101, 248, 299, 395,
 438
 M 21, 22, 39, 67, 81,
 84, 101, 103, 109-10,
 248, 283, 299, 395,
 405, 418-9, 437, 452-
 3, 438
 O 6, 148
 nearer than 22 parsecs 79
 neutron 323-4
 O 3, 5-6, 9, 65, 69,
 91, 94, 122, 126, 147,
 263-4, 328, 368, 370
 -1, 374, 39102, 400,
 403, 443
 OB 12, 25-6, 29, 253-4,
 259, 267, 353, 363,
 378, 400
 OBN/OBC 8-9, 12, 363, 392
 Of 5, 262, 369, 372-2,
 374, 403
 P Cygni 7, 9, 392
 peculiar 155
 planetary nebulae
 nuclei 7, 128, 374
 Population I 7-8, 107-8, 157, 202,
 209, 215-7, 220, 226,
 229, 247, 263, 273-4,
 376, 398-9, 403,
 444-5
 Population II 27, 107-9, 169, 173,
 210, 215-7, 221, 226,
 230, 247, 271, 274,
 299, 328, 375, 376,
 398-9, 403, 437,
 444-5
 pre main sequence 139, 143, 427
 proper motion 63, 417
 pulsars 324
 RR lyrae 50, 53, 54-7, 173,
 176, 180, 183, 184-91,
 193-5, 203, 223, 229,
 233-5, 241, 270, 282,
 394, 398-9
 red 25
 S 16, 33, 409, 410-12
 subdwarfs 21-2, 42-3, 63, 122,
 129-31, 293, 299, 393,
 400, 405, 454
 O 125, 126-8, 395

S (cont'd)

Star types (cont'd)

subgiants 4, 14, 79, 295,
314, 444

subluminous 21-2, 43, 48, 102,
107, 109, 129, 130-2,
394-5

supergiants 20, 38, 59, 60, 66,
270, 263-4, 267, 289-
90, 297, 349, 352-3,
359, 368, 370, 378,
387, 399-400

A 267, 289-90

B 12, 267, 353, 363,
421

G 381

K 393

M 38, 263-4, 452-3

O 6-7, 12, 353, 363

red 59-60, 353, 368

super metal-rich (SMR) 17, 381

super super giants 15, 150

TiO 195-6

WR 369

white dwarfs 63-4, 80, 86, 102,
105, 109, 112-3, 117,
118, 121, 128-9, 133,
134-6, 282, 293, 323-
4, 394-5, 400, 437,
438-40

Hyades 136

red 86, 395, 437, 438-40

space density 119, 439

Wolf-Rayet 7, 9, 363-5, 369,
370-4, 392, 403

Statistical parallax 49, 429

Stellar ages 43, 62, 101, 145, 155-
6, 255, 314, 316-7,
319, 346, 433-5

Stellar birthrate
function 119

Stellar Evolution Calculations
by Ciardullo and
Demarque 314-6, 345, 401

by Hejlesen 314-6, 401

by Henyey 327

by Sweigart et al.
evolutionary tracks 333, 401
189-90, 209, 215-6,
235, 267, 303-4, 313-
7, 333, 336-8, 341-2,
344, 353, 356, 359,
372, 385, 387, 398,
433, 441

isochrones 164, 215, 315-7,
328, 333, 335, 338,
344-5, 433, 441

loops in evolutionary
tracks 356, 359, 361, 368,
402

S (cont'd)

Stellar evolution calculations (cont'd)

massive stars 267, 349, 350-4,
357, 358-65, 369,
370-4, 375, 376-8,
402-3

Stellar surface brightness,
visual 281, 283, 400

Steward Observatory 112, 134, 209

Supergiant
blue to red ratio 264-5, 267, 349,
352-3, 354

ratio of C type to
M type 33-5, 37-8

red, minimum M_{bol} 264, 349, 353-4

relative numbers of
blue, yellow and red 25, 393

Supernovae 166, 192, 206, 252,
349, 352, 354, 356,
375-6, 402, 427

Surface gravity, log g 19-20, 24, 209, 215-
9, 229, 233, 293-8,
322, 383-5, 387, 433,
435, 443, 444-5

T

Temperatures, stellar 20, 22, 65, 66-74, 76,
86, 111-2, 194, 209,
215-9, 223, 229, 293-
8, 319, 381, 394,
405, 433, 434-5, 443-
5, 447, 449

Thomas-Fermi model 362

TiO bands 15, 22, 42, 103, 107,
109, 381, 389-90,
398, 409-12, 451, 454

U

Ultraviolet excess 90, 130, 145, 164,
201, 254, 273, 405,
413

University of Arizona 419

University of Colorado 373

University of Hawaii 158

University of Liege 53

University of Washington 194, 270

Urca process 356

Ursa Minor 269

U.S. Naval Observatory 102-3, 107, 116, 120,
129-31, 136

V

Van Vleck Observatory 41, 43, 154, 393

Vibrational instability,
in massive stars 357-8

V (cont'd)

Vilnius Observatory 410
 Vogt-Russell theorem 303, 305-7, 362, 400

W

Wesselink method 57, 241-2
 White dwarfs
 Hyades 134, 136
 masses 112-3, 117, 118-20,
 122-3
 radii 117, 118-9, 121-4
 space density 119, 438-9
 surface gravities 121-4, 134
 T_{eff} 134-5
 Wilson Bappu effect 59, 60, 62, 385, 429-
 32
 age correlation 62
 Winds, stellar 20, 193, 226, 237,
 240, 346, 363-4, 369-
 70, 381, 399

Y

Yale-IBM research group 345
 Yale parallax 130
 Yerkes Observatory 4, 103, 107, 116,
 417-8

Z

ZAMS 4, 112, 154, 156, 163,
277, 313, 321, 333,
 427, 429