

## INDEX OF SUBJECTS

### Abell clusters ( see clusters of galaxies )

A98	13,14,231
A115	13,231
A576	128
A1146	323
A1291	282
A1318	282
A1377	281,282
A1383	282
A1525	107
A1750	13,231
A1942	107
A2069	14
A2197	291
A2199	291
A2218	128

adiabatic fluctuations 111,128,203

antimatter (matter, see cosmic background rad., cosmological models)  
438,440,444,473,475

background radiation ( see cosmic background radiation )

BL Lac objects 7,11,39,49,52,98,347

PKS 2155-304	39,40
3C66A	39,40
0215+015	359,360,362,363
0235+164	362,363

black holes (hot accretion disks) 331,345,417,420,425,430,458

ergosphere 418

Ernst equation 429

primordial 463,465,468

clusters of galaxies ( see Abell clusters, large scale structures ) 7,13,  
93,101,107,160,223,267,268,321,325,360,363, 376,388,398,405,407

Butcher-Oemler effect 93, 101

catalogue of (subclustering) 185

identification 184

M/L ratio 205,291,292

missing mass (see cosmological models, large scale structures) 232,322,327,328

multiplicity 267

redshifts 107,285

structure 231

surveys 179,180

Coma	316,325
Virgo	316
SCO627-54	13,231
3C295	102,103

- 0630-566 223,224
- clusters (stars,see dynamics) 417**
- correlation (covariance) functions 2,162,193,195,203,219,252,265 367,333,334,336,398**
- cosmic background radiation 5,55,109,111,112,113,117,125,127,131,132, 135,136,139, 143,149,153,219,340,345,437,442**
- anisotropy 115,121,132,133,139,143,146,153,214,333**
- big-bang temperature 113**
- deviation from Planck spectrum 113**
- dipole anisotropy 114,141,145,156,158,256,336,343**
- dust (effects) 109,113,115,157**
- fluctuations 5,125,127,131,133,211,335,458**
- gamma-ray radiation 438,444,473**
- high energy (see gamma-ray ) 345,346,439**
- infrared (far) observations 135**
- inhomogeneity 117**
- large scale anisotropy 139,143,149,157,335,336,337,341**
- polarization 153**
- population III ( consequences ) 109,111,113**
- positron abundance 20**
- primordial anisotropies 132**
- quadrupole anisotropy 143,146,149,156**
- small scale anisotropy 121,133,156,157**
- small scale fluctuations 125,128,131,219,220,335,338,341**
- spectrum 111,153,154,158,315,334**
- spot (ring) type anisotropy 150,152**
- temperature anisotropy 150**
- temperature fluctuations 127,132,328**
- UV background 313,316**
- Woody-Richards anomaly 113,117,156**
- X-ray 19,20,98,333,440,444**
- cosmic-ray ( particles ) 440, 441**
- chronometric cosmology 17,29,45,117**
- cosmological models ( early phases ) 447,463**
- antibang 453**
- baryon symmetry 437**
- baryon asymmetry 437,488,499,500**
- B.E.S. model 477**
- big bang 476,483**
- bipartition (matter/antimatter) 473**
- bouncing 450**
- Brans-Dicke 490**
- bubble universes 475,478,498**
- clocks ( atomic,gravitational ) 487**
- cosmological constant 448,451,458,459,498**
- Einstein universe 480**
- equivalence principle 485,489**
- FIB cosmology 55**

- flatness problem 466,495
- Gott model 477,478
- Guth model 477,491
- homogeneity 463,483
- horizon problem 494
- inflationary 449,457,494
- inflectional 450
- isotropy 463,480,481,483
- matter-antimatter (see bipartition) 437,475
- Misner model 480
- monopoles (magnetic) 458,469
- perturbations,density fluctuations 457,459,461,466,470
- phase transitions 447,449,458,463,465,478,498
- quantum gravity 494
- singularity 449
- symmetry breaking 470,483
- steady state 496
- strings 469,471
- tepid little bang 447,450
- time (see clocks)
- vacuum 448,459,462,464,475,480,497
- Zeldovich model 477
- deceleration parameter 91,227
- density parameter ( $\Omega$ ) 111,169,175,204,246,256,393,414,436 448,458,495
- dynamics (relativistic) 417
- $e^+e^-$  annihilation line 19
- Eddington luminosity 21,346
- galaxies ( see radio sources,clusters of galaxies,BL Lac )
  - active galactic nuclei (AGN) 7,207,208,334,335,345,346,347,371 418,441,444
  - associations "abnormal" between galaxies 70
  - background component (the galaxy)159,314,318
  - blue galaxies in clusters 102-103
  - cD 233
  - color distribution (faint galaxies) 95
  - counts faint galaxies (SA 57,SA 68,Lynx 08+45,Her 17+50)
    - 24,29,95,97,98,99,105,106
  - distribution 161,170,175,198,303,390,401,411
  - dwarf 79
  - environmental effects 261,277,279
  - evolution 95,105,228
  - faint (blue) galaxies 97,98,105
  - field galaxies 87,105,159
  - formation 307,311,371,372,383,444,457,460,469,470,499
  - HI content 207
  - HI diameters 261
  - HII galaxies 79,352
  - H (molecular) 305

- halos 208,313,317,321,323,383,502
- Haro galaxies 106
- infrared observations 83,85
- isolated ( in low density regions,see field gal. ) 207,209
- luminosity function 170
- Markarian galaxies 106
- radio observations 85,97
- redshifts ( catalogues and surveys) 106,159,160,165,167,172,175,177
- Seyfert 7,26,55,103,171,347,375,379,440
- Stefan's quintet 66
- surveys (color) 95
- tidal encounters 208
- UV excess 98,207
  - NGC 4375 228
  - NGC 4387 228
  - NGC 4496 228
  - NGC 5128 373
  - VV172 66
- gamma rays ( see cosmic background )
- GIM suppression 314
- goldstino (see neutrinos) 314
- grand unified theories (GUT) 109,437,447,463,469,475,497
  - CP violation 437,445,458
- gravitational lenses 98,302,362,375-378,379,381
- gravitational radiation 436,460
- gravitinos (see neutrinos) 109,111
- groups of galaxies ( see clusters of gal.)263
- He ( primordial ) 112,319,320
- Hubble constant 1,227
- high velocity clouds 316
- intergalactic medium ( clouds,evolution ) 317,325,335,349,350,354,355,356 365,337
  - abundances 351,356,357
  - ionization 317,318,351,357,365
- large scale structure (see large scale structures) 1,236,310,387,483
  - entropy fluctuations 253
  - gravitational instability 393
  - isothermal model 4
  - N-body models 395,401,411
  - peculiar velocities 395,397
  - perturbations 4,249,253,327,387
  - velocity anisotropy 249
- large scale structures ( see also superclusters, large scale structure ) 1,
  - 159,165,185,211,217,265,273,281,285,291,293,295,297,333,341 403,405,445,471
  - adiabatic theory 4
  - cellular ( or honeycomb ) structure 213,405
  - dynamics 285
  - filaments,chains 161,173,216,235,236,275,279,388,390,391,408

- flattening 250
- geometry (structure, topology) 161, 165, 187, 265, 287, 288, 387, 389
- M/L ratio 285, 289, 299, 416
- pancakes 219, 249, 252, 311, 388
- peculiar motions 161
- ridges 212, 403
- "unseen" material 303
- local supercluster ( or Virgo supercluster ) 1, 5, 6, 169, 214, 227, 237, 241 408
  - density enhancement 240
  - kinematics 241, 245, 251
  - infall velocity 89, 173, 229, 242, 245, 246, 256, 259
  - local group (motion) 245, 247, 255, 256, 258
  - M/L ratio 259
  - random motions 237, 246
  - rotation 242
- luminosity function ( see also galaxies )
  - bivariate 78
  - (LLF) 47, 89, 90
- microwave background ( see cosmic background radiation )
- missing mass ( see clusters of gal., unseen mass ) 232, 321, 475, 495
- monopole magnetic ( see cosmological models )
- neutrinos ( and ... inos, see cosmological models)
  - 109, 221, 300, 304, 307, 308, 309, 313, 315, 318, 320, 321,
  - 325, 327, 329, 387, 447, 449, 501, 503, 506
- neutrino lifetime 313, 314
- population III ( see cosmic background radiation ) 119, 120, 301, 385, 436
- pulsar ( 1913+16 ) 431-435
- QSOs, quasars 7, 49, 95, 106, 335, 341, 379, 474
  - absorption lines ( bands ) 349, 352, 353, 354, 355, 356, 364, 365 367, 369, 375
  - alignments between QSOs and galaxies (see association with galaxies)
  - association with galaxies 66-71, 195, 375, 381
    - Markarian 205 66
    - NGC 1073 69
    - NGC 4319 66
    - pair 1548+114 69
    - 3C 303 67
  - automated detection 31
  - background luminosity 99
  - candidate 106
  - catalogue 33
  - clustering 189, 191, 194
  - color distribution 95, 105
  - density ( space, surface ) 27, 376
  - distribution 26
  - evolution 23, 106, 371
  - fields searched
    - 0053-2803 24

- 0112-35 24
- 0200-50 24
- 2203-1855 24
- 2204-1855 24
- formation (epoch) 371
- image deconvolutions 49
- luminosity ( at 1 mm wavelength ) 51
  - 3C273 51,53
  - PKS2126-15 53
  - Q0420-388 51,53
- luminosity function 190
- pairs 369,377
- redshifts 65,106,353
- redshift limit, cutoff, periodicity 35,43,55
- selection effects (radio) 57
- selection effects (optical) 59
- spectra 58,349
  - 0028+003 369, 379
  - 0029+002 369,370
  - 0237-233 365
  - 0254-334 369,370
  - 0528-250 367
  - 0537-286 58
  - 0642+449 58
  - 0805+046 352,367
  - 0938+119 58
  - 0957+561 369,370,375-378,
  - 1115+080 375
  - 1228+076 370
  - 1228+077 370
  - 1402+044 58
  - 1442+101 38,57,58,349,352,354,365,366,367
  - 1448-232 367
  - 1548+114 69, 370
  - 1548+115 375
  - 1614+051 58
  - 1623+268 369,370
  - 1623+269 370
  - 1635+267 375
  - 2126-15 58
  - 2000-330 36,38,57,58,61,62
  - OH 471 38
  - OQ 172 see 1442+101
  - PHL 957 365
  - SGP 0048-298 62
- surveys 23,24,25,26,57,105,375
- UVX 24,25,26

- variability 41,381
- radio sources ( see BL Lac objects, galaxies, Quasars )
  - compact 207
  - counts 105,131
  - density 74
  - evolution 43,47,73
  - galaxies 83,85,97,282,105
    - 3C6.1 97
    - 3C34 97
    - 3C184 97
    - 3C265 97
    - 3C280 97
  - Hubble diagram 97
  - infrared observations 83
  - luminosity function ( RLF ) 43,73
  - selection effects 57
  - surveys 73,74,75,81,83
  - weak source population 76
- redshifts (see galaxies,clusters of galaxies) 159
  - catalogues and surveys 160,165
- Rubin-Ford effect 160,257
- Schwarzschild radius 21
- substellar bodies 383
- Sunyaev-Zeldovich effect 363
- superclusters ( see large scale structures,local supercluster )
  - Coma/A1367 162,165,271
  - Hercules 162,165,291,292,405
  - Horologium 297
  - Indus 293
  - Lynx-Ursa Major 274,276,405
  - Pegasus 405
  - Perseus-Pisces 162,273,295
  - Ursa Major 281
  - 0138-10 285,286,287
  - 1451+22 285,286
  - 1615+43 285,286
  - 2306-22 285,286,287
- supermassive objects (SMO) 119,301
- supernovae 227,228
- supersymmetric theories (see cosmological models) 313
- surveys ( see galaxies, QSO,quasars,radio sources )
  - Einstein deep survey 10
  - 75cm Cambridge 5C survey 81
- universes ( see cosmological models )
- unseen mass ( see missing mass, large scale structures, cosmological models ) 299,383,505
- UV background (see also cosmic background ) 313
- voids ( see large scale structures, cosmological models)

159,197,203,205,207,211,215,217,281,304-408  
**Woody-Richards anomaly (see cosmic background)** 113,117  
**X-ray sources (see also cosmic background)** 7,333,347  
    **background** 340  
    **counts** 339  
    **dipole** 337,343  
    **evolution** 340