

SUBJECT INDEX

- Absorbers - Lyman alpha 479
- Absorbers - metal rich 479
- Absorbing matter around QSOs 475
- Absorption Lines
 - and radio structure 195-196
 - in QSO pairs 478
 - intervening gas clouds 10, 195, 555-561
 - locking 318
- Absorption outflow velocity 195, 318
- Absorption spectrum - high resolution 329, 569, 571
- Absorption systems - high ionization 324, 565
- Abundances - heavy element 329
- Acceleration - in situ 415,424
- Accretion
 - non spherically symmetric 307, 333
 - shocks 408
 - spherical 409
 - subcritical 361
- Accretion disk 13, 397, 399, 582
 - black body radiation 28
 - dynamo action in 381,412
 - flares 411-412
 - instabilities 354, 371-381
 - radiation pressure supported 378
 - stability 372
 - thick 352, 409-410
 - tilted 352
 - thermal emission 75
- Accretion flows 3
 - transport of radiation in 407
- Accretion funnels 399
- Accretion rate 76, 360, 371, 396, 582
- Active galactic nuclei - X-ray observations 223
- Alfven mode oscillations 421
- Annihilation line from the Galactic centre 383, 385
- Arm length ratio 198
- Axial ratio of extended structure 189

- Baldwin effect 231, 297, 440, 506
- Balmer continuum 74, 90, 299, 300
- Balmer decrement 85, 299
- Balmer line enhancement 353
- Balmer line wings 347
- Berger-Fringant catalogue 548
- Biases affecting quasar statistics 439
- Big bump 75, 368

- Black holes 6, 19, 519
 - binary 286, 367
 - eclipsing binary 359
 - magnetic extraction of energy from 362
 - models 359-369
 - observations of 366
 - spinning 360, 384, 395
- Blandford-Znajek luminosity 396
- Blazars 1, 79
- BL Lac objects 1, 54, 59, 65, 91, 131, 143, 149, 265, 406, 491, 571
 - cosmological evolution 491
 - flux monitoring 171
 - luminosity function 491
 - X-ray selected 265-266, 491
 - X-ray spectrum 265
 - X-ray variability 267, 269, 273
- Blue bump 67
- Braccesi surveys 50, 104, 248
- Bremsstrahlung
 - Comptonised 6
 - thermal 273
- Bright quasar survey (see Palomar-Green survey)
- Broad absorption line region (BALR) 317, 581
 - abundances in 324
 - covering factor 321
- Broad absorption line (BAL) QSOs 26, 35, 195, 231, 298 307, 310, 317-330, 505
 - emission lines of 319
 - line profiles 320
 - radio properties 325
 - polarization changes through line profiles 329
- Broad emission line region (see Broad line region)
- Broad line radio galaxies 103, 279-306
- Broad line region 3, 279-286, 289, 295-306, 317, 331-336, 337, 341-342, 349, 415, 581
 - creation of 314
 - formation of 307-316
 - recurrent activity in 353
- C IV equivalent width 443
- C IV line profile 351
- Cascade spectrum 75
- Catalogues of quasars 51, 53
- Catastrophe theory 532
- CCD imaging 117, 123, 125, 127, 481, 484, 551
- Central components of double radio quasars 173
- Central engine 4, 141, 331, 395
 - precession of 157, 159
- Chronometric cosmology 43, 102, 140, 251, 493, 556, 567

- Close pairs of quasars 469
- Cloud kinematical models 309, 311
- Clustering of quasars 40, 45, 447-453, 477, 495, 499, 503, 581
- Collisional de-excitation 289, 296
- Collisional ionization 309, 324
- Colour selected samples 431
- Compact double sources 163
- Compactness parameter 270
- Comparative cosmology 493-494
- Compton scattering 274, 312, 362, 388
- Continuum emission from OVV's 65-71
- Core-dominated sources 163, 203-206, 207, 217, 421
- Core-halo structure 187
- Core radio luminosity 242
- Correlation between IR and X-ray 86,228
- Correlation between X-ray and optical 224
- Cosmic conspiracy 421
- Cosmic ray transport equation 405
- Cosmic voids 575
- Cosmological constant 510, 520
- Cosmological evolution 105 (see also luminosity evolution/function)
- Cosmological evolution from X-ray data 489
- Cosmological hypothesis 463
- Counter jet 166, 211, 581
- Counter lobe 211
- Counts of quasars 33, 439
- Critical density 509
- CTIO-objective prism survey 443
- CTIO Schmidt telescope survey 439
- Curtis Schmidt survey 449, 451
- Curvature radiation 385
- Cyclotron frequency 421
- Cyclotron resonance absorption 421

- Dark halos 10
- Dark matter 11, 462, 470, 510, 518, 523, 529, 535,
539, 545, 551, 583
- de Vaucouleur's law 121
- Deceleration parameter 443, 498, 520
- Deep X-ray surveys 248
- Dense star clusters 360
- Density evolution 40, 429, 434, 447
- Depolarization 191
- Diffusion constant 407
- Discrepant redshifts 465, 552
- Doppler boosting 91, 580 (see relativistic beaming)
- Dwarf novae - outbursts 381
- Dynamo action in accretion disk 381, 412

- Eddington accretion rate 373
- Eddington-Lemaitre type model 509
- Eddington limit 268, 269, 274
- Eddington luminosity 6, 360, 383, 417, 582
- EFOSC 57
- Einstein Observatory 27, 68, 73, 223, 239, 247, 253, 261, 263, 265, 273, 275
- Electromagnetic wind - relativistic 360
- Electron energy distribution 421
- Electron injection spectrum 266
- Electron-positron
 - cauldron 383-393
 - jets 401
 - pairs 269, 383
 - plasma 4, 362, 416, 582
- Electron scattering radiation 308
- Emission line
 - candidates 47, 449, 501
 - clouds 4
 - kinematics 331
 - of BAL QSOs 319
 - of quasars 279-288
 - theoretical studies 295-306
- Epoch of quasar formation 448
- European VLBI network 181
- Event horizon 409
- Evolution function 430 (see also luminosity evolution/function)
- Evolution models 489
- Evolution of optical luminosities 225
- Evolution of quasars 439
- Evolution of X-ray luminosities 225
- Excitation mechanisms 343
- EXOSAT 60, 77, 223, 265, 267, 269, 583

- Failed galaxies 12
- Faint quasars - automatic detection of 55
- Faraday depolarization 422
- Faraday rotation 141, 187
- Fe II emission 74
- Fermat's principle - lensing 529, 530
- Fermi acceleration 405
- Flares in accretion disks 411
- Flatness problem 510
- Flickering 80
- Flip-flop model 219
- Flow models 312, 399
- Fluid flows - confined 165, 399
- Free-free continuum absorption 342
- Free-free emission 356
- FUV spectrophotometry 347
- Fuzz 8, 121, 581

- Galactic centre 362, 383, 385
- Galactic halos 545
- Galaxy clusters - association with quasars 481-487
- Galaxy formation 10, 460, 462
- Galaxy-galaxy associations 466
- Galaxy luminosity function 482
- Galaxies - quantized structure in space distribution 464
- Gamma radiation 383
- Gamma ray background 308
- Gamma Ray Observatory 28
- Gas dynamics 307-316
- Geometrical time delay 530
- Gravitational lenses 10, 11, 26, 393, 430, 455, 459
468, 477, 478, 517, 529, 539, 545, 547, 582
- Gravitational lenses
 - amplification 486
 - astigmatism 532, 539
 - as cosmological probes 539
 - elliptical 540
 - image parity 530
 - magnification 517, 518, 522, 539, 540
 - missing image 541-543
 - models 529-537, 541
 - odd image 541
 - observations 517-527
 - optical monitoring of 0957+561: 549
 - theorems 535
 - time delay 520, 530, 539, 549, 553
 - Q2237+350: 551-552
 - uniqueness problem 539
- Gravitational radiation 367
- Grism plates/surveys 33, 46, 47, 459
- Grism selected candidates 36

- Hard radiation from QSOs & AGNs 383
- Heavy element clouds 555
- Heavy elements-in Ly α clouds 556
- Heirarchical clustering 43
- High ionization lines 295, 309
- Host clusters of quasars 486
- Host galaxies
 - of quasars 8, 13, 104, 117, 121, 123, 308
 - of BL Lacs 125
- Hotspots 189
 - advance velocity 201
 - optical and radio emission 185
- Hubble's constant 464, 509, 520, 539, 553
- Hubble diagram of optically selected QSOs 40
- Hubble's law 463, 465, 473, 494
- Hubble Space Telescope (see Space Telescope)

- Inflationary universe models 509-510
 Infrared searches 18
 Imaging - resolved 117
 Inhomogeneities (see Quasar inhomogeneities)
 "Interactivating" AGNs 547
 Intercloud medium 310, 333
 Intergalactic
 - absorption 449, 583
 - clouds 555, 569
 - hydrogen clouds - evolution 563
 - medium 502
 - reddening 453
 Intervening galaxies 195, 583
 Inverse Compton emission/scattering 67, 113, 240, 276,
 308, 314, 363, 385, 405, 419
 Inverse Compton X-rays 75
 Ion kinetic temperature 3
 Ionization mechanisms 292
 Ionization parameter 296, 308, 331, 341, 349
 IRAS point source catalogue 18
 IRAS "strong" source survey 18
 IR dust emission 75
 IR Seyferts 20
 Isotropy of quasar distribution 447
- Jets**
 - acceleration 399
 - ballistic outflow 165
 - curvature/distortion 181
 - decollimation 413-414
 - flaring 165, 185
 - fluid dynamic simulations 399, 405
 - magnetic confinement 175, 369
 - one sided 107, 166, 173, 211, 217
 - optical 127
 - precession 187
 - pressure equilibrium 176, 399
 - two sided 139
 - VLBI 163, 165
 - wiggles 214
 - X-ray 275
 - wind interaction 352
- K-corrections 210, 482
 Kelvin-Helmholtz instabilities 166, 400, 417
 Kerr metric 6, 360, 410
 Klein-Nishina cross section 363
 Kormendy's relation 121

- Langmuir waves 419
- Leiden-Berkeley deep survey sample 110
- Lemniscate models 531, 535
- Lenses (see Gravitational lenses)
- Light curves of quasars 87
- Limacon 531
- Line emission - anisotropy of 301
- Line excitation mechanisms 298
- Line intensities - computation 295
- Line locking 318
- Line polarization 283
- Line ratios 299
 - FeII to H β ratio 215
 - FeII to Ly α ratio 281
 - FeII to MgII ratio 281
 - Ly α to H β ratio 348
 - OII to OIII ratio 186
- Linear polarization - flip in position angle 406
- Linear size evolution 194
- Liners 1, 20, 21, 281, 289, 361, 365
- Low frequency variability 149-155, 294
- Low ionization lines 295, 309, 337
- Limit cycle behaviour 371
- Luminosity dependence of space density 449
- Luminosity-dependent density evolution 435, 490
- Luminosity-dependent luminosity evolution 437, 490
- Luminosity evolution 29, 40, 447, 460, 490, 491, 581
- Luminosity function
 - effect of lensing 518
 - evolution 33, 208, 429-438, 439
 - of galaxies associated with QSOs 482
 - of globular cluster 435
 - optical 21, 38, 493
 - radio 95, 208, 455
 - Seyferts 433
- Lyman-alpha
 - absorption systems 21, 479, 555
 - clouds 555
 - emission 503
 - forests 555-561, 563, 569, 571
- Lyman continuum 296

- Mach number 313
- Magnetic extraction of energy from black holes 362
- Magnetic fields - spatially periodic 419
- Magnetic Penrose process 395
- Magnetic reconnection 411
- Magnetohydrodynamic flows 419
- Markarian Seyferts 20
- Mass loaded flows 310
- Mass loss 312

- Melon-seed mechanism 412
 MERLIN 181, 189, 211
 MG survey 521
 Microwave background 9, 241, 509, 511
 Microwave background - isotropy 494
 Minilensing 11, 459
 Mini-quasars 20
 Minkowski's object 129
 Missing mass in galaxy clusters 494
 Models - extragalactic radio sources 415
 Molecular Hydrogen absorption 561
 Monopole problem 510
 Multicolour search technique 33
 Multiplicity function analysis 495
- N-type galaxies 517
 Narrow band imaging 345
 Narrow emission line galaxies 20, 35
 Narrow emission lines 36, 289-294
 Narrow line region 279, 281, 289, 295, 334, 346, 415, 581
 New physics 470
 Non-cosmological redshifts 11, 437, 463-473, 499
 Non-luminous matter - intervening 517, 526
 Nuclei of bright galaxies-VLBI observations 169
 Nucleosynthesis - big bang 509
- OIII asymmetry 280
 OIII emission 86, 345
 Objective prism-grism techniques/surveys 51, 53, 448, 465
 Objective-prism plates 37, 49, 55, 501, 503, 505, 573
 One sided ejection 381, 412
 Optical beaming 527
 Optical pairs 548
 Optical searches 20
 Optical variability 79
 Optically quiet quasars 113-114, 244
 Optically selected quasars
 - new sample 33
 - radio emission 95-101, 103-107, 111-112
 - redshift distribution 103
 - X-ray emission 244
- Optically violent variables (OVVs) 1, 65, 157, 513
 - continuum emission from 65-71
- Pairs of faint blue objects 547
 Pairs of quasars 26, 475-480, 499
 Pair production 4, 75, 257, 420
 Palomar-Green survey 67, 73, 97, 104, 319, 430, 440, 481
 Pancakes 43
 Parker-type outflow 399, 403
 Parker selected region 457

- Penrose process - magnetic 395
- Penrose process - revived 395-398
- Percolation parameter 495
- Permitted emission lines 349
- Photoionization models 289, 295, 298, 324, 331, 337, 350, 581
- Pitch angles - anisotropic distribution 425
- Pitch angles - small 423
- Plasma instabilities 421
- Plasma oscillations 420
- Polarimetry 79
- Polarization
 - circular 423
 - distribution in compact radio sources 141-147
 - frequency dependent 82
 - IR 75
 - of lines 283
 - measurement by VLBI 141
 - radio jets 217
 - synthesis 142
 - X-ray 75
- Population III objects/stars 417, 470
- Power spectrum analysis 88, 502, 504
- Preferred quasar sites - evolution of 485
- Pregalactic stars 417
- Protogalactic HI clouds 575
- Protogalaxies 11
- Publication selection effect 476

- QSO-galaxy interaction 308
- QSOs in the fields of nearby galaxies 573-574
- Quasar anisotropies 453
- Quasar counts 33, 38, 455
 - at faint magnitudes 33
- Quasar catalogues 51, 53
- Quasar clustering 40, 45, 447-453, 477, 499-500, 503, 505
 - correlation function 40
 - in the SGP region 503
 - in the Sculptor region 505
- Quasar detection - from grems plates 55
- Quasar formation 460
- Quasar-galaxy association 466, 481, 501
- Quasar-galaxy spatial-covariance amplitudes 481, 483
- Quasar inhomogeneities 45, 208, 466, 511
- Quasar-like activity in nearby galaxies 20
- Quasar luminosity - dependence between optical and radio 109
- Quasar luminosities - relation between X-ry, optical and radio 263-264
- Quasar pairs 26, 475-480, 499
 - frequency distribution 476
- Quasar progenitors 417

Quasar searches

- at high red shifts 22
- by slitless spectroscopy 47
- in infrared 18
- in optical 20
- in radio 18
- in X-rays 27
- with automatic measuring machines 24

Quasar statistics at high redshifts 455

Quasar surveys - spectroscopic 38

Quasars in superclusters 45

Quasars - interaction with environment 185

Quasars near bright galaxies 45

Quasars near galaxies 467

Quasars - probes of the intervening medium 10, 478

Quasars - radio loud 177, 316, 481

Quasars - radio quiet 4, 100, 279

QUASAT 583

Radiation pressure 332

Radiation tori - stability 361

Radiative acceleration 313, 333

Radio galaxies - broad line 103

Radio galaxies - radio structure 189

Radio jets - knots in 129 (see also Jets)

Radio loud quasars - association with elliptical galaxies 177

Radio luminosity function - evolution 437 (see also evolution/
luminosity function)

Radio morphology 173-179

- at high red shifts 181-184

Radio quasars in rich cluster environment 435

Radio quiet quasars - association with spiral galaxies 177

Radio quiet QSOs 4, 100, 279

Radio searches 18

Radio selected quasars - redshift distribution 103

Radio source models 415

Radio structure

- and absorption lines 195
- and IR-UV spectra 215
- compact 131-140
- extended 173-179, 181-184, 189-190
- extended bridges 189
- one sided 191, 211, 219

Radio variability 79, 149-155

Ram pressure confinement 310

Raman scattering 369, 417-418

Reacceleration 405

Reddened AGN 85

Redshifts - cosmological interpretation 475, 497, 579

Redshift cutoff 18, 22, 29, 32, 208, 447

- for radio galaxies 458

- Redshift distribution 51, 54, 207, 495, 497, 511
- peaks and periodicities 464, 465
- selection effects 497
- Relativistic beaming/bulk motion 4, 67, 69, 97, 114, 151, 159, 175, 196, 197, 198, 204, 207, 211, 215, 361, 416, 470
- Relativistic jet model 517
- Resonance line scattering 321, 329
- ROSAT 583
- Rotation measure 191
-
- Schwarzschild radius 270, 274, 410, 413, 415
- Schechter parameters 459
- Searches - for high redshift QSOs 22
- Semi-forbidden lines 341
- Seyfert 1 Galaxies
- continuum emission 85
- optical variability 89
- radio power 103
- X-ray selected 85
- X-ray studies 253
- Shadow universe 519
- Shock acceleration 401, 407
- Shock heating 309
- Shocked infall 333
- Shock model for QSOs & AGN 405-406
- Shocks - stationary 401
- Sky distribution of QSOs 475
- Sonic points 314, 403
- Source counts 455 (see also quasar counts)
- Source function 430
- South galactic pole field 25, 503
- South galactic pole strong sample 207
- Space Telescope 26, 123, 329, 401, 450, 502, 536, 552, 554
- Spatial covariance function 483
- Speckle interferometry 521
- Spectral index
- optical to X-ray 226, 236, 239, 250, 252
- radio to optical 106, 110, 239
- Spectroscopic surveys 38, 487
- Spectroscopy
- low resolution 46
- multi object 57
- of quasar candidates 34
- slitless 47, 431
- Spinars 360
- Stagnation pressure 311
- Standard candles 494
- Starbursts 1, 119, 129, 365
- Steep-spectrum compact radio sources 113, 131, 194
- Steep-spectrum cores 182

- Stellar wind 399, 415
 Stimulated Raman scattering 419-420
 Strings 478, 519, 537
 Strong-lined quasars 451
 Super Eddington luminosity 76
 Superclusters 447, 495
 Superluminal jets 401
 Superluminal motion 100, 137, 141, 167, 177, 200, 203, 211, 360,
 470, 494, 580, 583
 - in 3C279 161
 - in weak cores of extended quasars 167
 Superluminal quasars - new 163
 Supernova explosions 581
 Super-superclusters 495
 Surface density of quasars 35
 Surveys 17-32
 - Cerro el Roble survey 49
 - faint QSO redshift survey 37
 - IRAS 18, 61
 - X-ray 233, 253
 Survival statistics 250
 Synchrotron self absorption 6, 423
 Synchrotron self-Compton process 60, 69, 240

 Tearing-mode instability 411
 Thermal instabilities 374
 Thick accretion discs - models 352, 409-410
 Tiffit effect 465
 Transport equation - cosmic rays 405

 Unified scheme 137, 197, 204, 208, 215, 264
 UK Schmidt plates 450, 503
 UV bump 4, 90, 341
 UV excess quasar candidates/surveys 45, 47, 54, 501
 UV spectra of quasars 575

 Variability 65-70, 87, 89, 95, 359, 401
 - 3C273 87
 - OJ287 91
 - at low radio frequency 149-155, 294
 - BL Lac objects 171, 265, 267, 359
 - broad line 283, 342, 343
 - correlated broad band 149
 - correlation with redshift 500
 - day to day 89
 - emission lines 349, 580, 581
 - optical 79, 87, 191, 343
 - periodicity 88, 91, 93
 - radio 79
 - Seyfert 2 galaxies 93

- short time scale X-ray 257, 401
 - structural 136
 - test of extrinsic interpretation 153
 - time scale and galactic latitude dependence 153
 - uncorrelated broad band 151
 - UV 76, 415
 - X-ray 8, 59, 68, 257, 267, 269-270, 273-274
- Virgo cluster region - quasar searches in 501-502
- Viscous instabilities 374
- Voids 575
- Warmers 1
- Weak-line quasars 451
- Wind solution
- subsonic outflow 400
 - supersonic outflow 400
- Wind-type flows 399-404
- X-ray background 27, 224, 247, 250, 256, 308, 489, 580
- isotropy 453, 494
- X-ray beaming 276
- X-ray catalogues 60
- X-ray deep surveys 248
- X-ray emission 7
- of radio quasars 239-246
- X-ray to IR continua 27, 73
- X-ray jet in 3C273: 275
- X-ray power law index 73
- X-ray properties at high redshifts 247-252
- X-ray properties - Seyfert galaxies 253
- X-ray quiet quasars 254
- X-ray searches 27
- X-ray selected active nuclei 255
- X-ray selected quasars 233
- X-ray selected Seyferts 85, 347
- X-ray slopes of quasars 261-262
- X-ray survey - medium sensitivity 233-238, 253, 255, 265, 438, 467, 490, 493
- X-ray Ultraviolet Explorer (XUVE) 28
- X-ray variability 8, 59, 335