

SUBJECT INDEX

- accretion 201ff
- cosmic rays
acceleration 117ff, 121ff, 147, 240
dynamical effects on interstellar gas 10, 103ff, 172ff, 178ff, 234, 366
energy spectra 77ff, 129, 178ff
heating of interstellar gas 11, 52ff, 77ff, 379
interstellar modulation 199
isotropization 115ff, 126, 178ff, 186
production rate 190, 234, 238ff, 363, 368
- elephant trunks 72, 73
- Faraday rotation 4, 159ff, 161ff, 168, 197
- galactic disk 7, 57ff, 172, 184
galactic halo 6, 189ff, 372
galactic nucleus 7, 193, 363
galactic wakes 209ff
globules 73, 97, 340
grains, *see* interstellar dust
- helium abundance 225ff, 352ff
helix model of magnetic field 14, 157ff, 185
high velocity clouds 48, 60, 164, 191, 367
- infrared radiation 4, 64, 65, 69, 343ff, 348ff
interarm gas 27ff, 199, 373
intercloud gas 11, 15, 18, 52ff, 81, 88ff, 311, 373
intergalactic gas 6, 211ff, 215ff
interstellar dust 8, 13, 306ff
diffuse galactic light 323
diffuse lines 327
extinction curve 307ff, 324ff, 327ff
formation/destruction 311ff, 330ff
gas/dust ratio 331ff
occurrence in HII regions 348
polarization of light 155ff, 186, 198, 313, 322ff
relation to molecules 41ff, 320, 326, 358
relation to spiral structure 22ff, 33ff, 309ff, 311ff
temperature 313ff
interstellar energy balance 9, 18, 70ff, 278, 362ff
interstellar gas (HI)
abundances 36ff, 41ff
cloud-cloud collisions 60ff
cloud formation 56ff, 82ff, 85ff
densities (cloudiness) 14, 19ff, 33ff, 44, 52ff, 64, 82ff, 98ff, 381
free electrons 51ff, 89ff, 379ff
kinematics 44ff, 85ff, 98ff
(*see also*: interstellar turbulence)
magnetic field inside clouds 157, 187
mhd-instability, *see* interstellar
magnetic field/dynamical effects
molecules, *see* interstellar lines
thermal balance (cooling, heating, temperatures) 10ff, 29ff, 52ff, 61, 313ff, 366, 379
thermal instability 52ff, 81, 102ff, 379
two-phase model 11, 16, 33, 52ff, 77ff, 81ff, 103ff, 176, 311ff, 369, 379
- interstellar gas (HII)
compact HII-regions 343ff, 356
densities 65ff, 336ff
dust in HII-regions 348
electron temperatures 65ff, 336ff, 357
evolution of HII-regions 65ff, 72ff, 93ff, 336ff
helium abundance 352ff
inhomogeneities 72ff, 93ff, 336ff
recombination lines 4, 336ff, 350ff
relation to star formation 336ff, 347ff
solar HII-region 259, 267
- interstellar lines (atomic)
calcium and sodium 15, 39ff, 45, 103, 371ff
hydrogen (Ly- α absorption) 100, 268, 269, 325
hydrogen (Ly- α emission) 4, 51, 77ff
hydrogen (21 cm absorption) 29ff, 41ff, 379
other ions (or atoms) 39
- interstellar lines (molecules)
excitation of lines 318, 340ff
formation/destruction of molecules 317ff, 320
individual molecules:
CH, CH⁺, CN 39, 316, 318, 335, 372
CH₄, C₂₀H_n 326, 328
CO 318
H₂ 61, 317ff, 320ff, 358, 372
H₂⁺ 326
H₂O 4, 40, 317, 328, 340, 341, 344, 345, 351
H₂CO 40, 42, 317, 333
HCN, HC₃N 318
NH 316
NH₃ 4, 41, 317, 328, 333, 340, 341
OH 4, 30, 36, 40ff, 134ff, 151, 316ff, 332ff, 340ff, 344ff, 349, 351, 372
- interstellar magnetic field 5, 151ff, 168ff, 185, 196ff, 365, 382

- dynamical effects 10, 57ff, 63, 82ff, 88, 103ff, 172ff, 174ff, 185ff, 364, 366
- Faraday rotation 4, 159ff, 161ff, 168, 197
- field strength 166, 168ff, 184
- field strength inside dense H I clouds 157ff, 187ff
- interaction with cosmic rays 10, 57ff, 63, 82ff, 88, 103ff, 172ff, 174ff, 185ff, 364, 366
- optical polarization 157ff, 186, 198, 313, 322ff
- origin of magnetic field 169ff, 192 ff, Zeeman-effect 4, 157ff
- interstellar turbulence 15, 20, 21, 44ff, 88, 104, 185, 380
- ionization fronts 67ff, 94ff
- mass balance 7, 221ff, 236, 248, 278
 - birthrate function/luminosity function 221ff
- mass loss of stars
 - dynamical influence on interstellar gas 259, 278, 291ff
 - mass loss in binary systems 300ff
 - physical explanation of mass loss 256, 295, 298
 - rates/observations of mass loss 272ff, 281ff, 295ff
 - solar mass loss 249ff, 263ff, 272
- photon whirls 216ff
- plasma physics
 - anomalous resistivity 113ff
 - Cherenkov resonance 114
 - collisionless shocks 142ff
 - cyclotron resonance 114
 - excitation of waves in plasmas 115ff
 - interaction of waves in plasmas 116ff
 - interstellar plasma turbulence 133ff, 137, 140
 - plasma turbulence 117ff
- protostars 336ff, 347ff, 356
- pulsars 90, 161, 234, 237, 238, 245, 248
- shockwaves 60ff, 67ff, 84, 95ff, 141ff, 230ff, 241, 259, 267, 371
 - collisionless shocks 142ff
 - solar wind 249ff, 263ff, 272
- spiral structure 6, 22ff, 33, 84, 104, 309ff
- star formation 227, 336ff, 347ff, 356
 - a new mechanism for star formation 359ff
- supernova remnants 229ff, 236ff
 - dynamical evolution 229ff
 - energization of interstellar medium 18, 71ff, 233ff
 - observations of remnants 243ff
 - X-ray production 19, 242
- thermal instability 52ff, 81, 102ff, 379
- two-phase model of interstellar medium 11, 16, 33, 52ff, 77ff, 81ff, 103ff, 176, 311ff, 369, 379
- X-ray radiation 4, 19, 77ff, 211, 242, 359ff, 372
 - heating by X-rays 53, 77ff, 301, 379
- Zeeman effect 4, 157ff