

10 Literaturverzeichnis

- Adams, J. B. & Filice, A. L. (1967): Spectral reflectance 0.4 to 2.0 microns of silicate rock powders. *J. Geophys. Res.*, **72**, 5705-5715.
- Adams, J. B. & Smith, M. O. (1986): Spectral mixture modelling – A new approach to analysis of rock and soil types at the Viking lander site. *J. Geophys. Res.*, **91**, 8098-8112.
- Adams, J. B., Hörz, F. & Gibbons, R. V. (1979): Effects of shock-loading on the reflectance spectra of plagioclase, pyroxene, and glass (abstract). *Lunar and Planetary Science*, X, 1-3. Lunar and Plan. Inst., Houston.
- Aines, R. D. & Rossman, G. R. (1984): Water in minerals? A peak in the infrared. *J. Geophys. Res.*, **89**, 4059-4071.
- Anderson, T. W. (1958): *An introduction to multivariate statistical analysis*. John Wiley & Sons, Inc., New York.
- Anderson, J. D., Lau, E. L., Sjogren, W. L., Schubert, G. & Moore, W. B. (1996a): Gravitational constraints on the internal structure of Ganymed, *Nature*, **384**, 541-543.
- Anderson, J. D., Sjogren, W. L. & Schubert, G. (1996b): Galileo gravity results and the internal structure of Io, *Science*, **272**, 709-712.
- Anderson, J. D., Jacobsen, R. A., Lau, E. L., Moore, W. B., Olson, O., Schubert, G., Thomas, P. C. & the Galileo Gravity Science Team (2001a): Shape, mean radius, gravity field and interior structure of Ganymed, *BAAS*, **33**, 1101.
- Anderson, J. D., Jacobsen, R. A., Lau, E. L., Moore, W. B. & Schubert, G. (2001b): Io's gravity field and interior structure, *J. of Geophys. Res.*, **106**, 32963-32970.
- Apataker, I. (1987): A Near-Infrared Mapping Spectrometer for Investigation of Jupiter and its Satellites. In: *Imaging Spectroscopy II*, SPIE Vol. 834, 196.
- Arvidson, R. E.; Guinness, E. A.; Dale-Bannister, M. A.; Adams, J.; Smith, M.; Christensen, P. R.; Singer, R. B.: Nature and distribution of surficial deposits on Chryse Planitia and vicinity, Mars; *J. Geophys. Res.*, **94**, 1573-1587, 1989.
- Bagenal, F., Dowling, T. E. & McKinnon, W. B. (2004): *Jupiter – The Planet, Satellites & Magnetosphere*; Cambridge Univ. Press, 719 S.
- Balaji, V., David, D. E., Tian, R., Michl, J., Urbassek, H. M. (1995): Nuclear sputtering of condensed diatomic molecules. *J. Phys. Chem.*, **99**, 15565-15572.
- Bar-Nun, A., Herman, G., Laufer, D. & Rappaport, M. L. (1985): Trapping and Release of Gases by water ice and implications for icy bodies. *Icarus*, **63**, 317-332.
- Barth, C. A., Hord, C. W., Steward, A. I. F., Pryor, W. R., Simmons, K. E., McClintock, W. E., Ajello, J. M., Naviaux, K. L., Aiello, J. J. (1997): Galileo ultraviolet spectrometer observations of atomic hydrogen in the atmosphere of Ganymede. *Geophys. Res. Lett.*, **24**, 2147.
- Bayly, J. G., Kartha, V. B. & Stevens, W. H. (1963): The absorption spectra liquid phase H₂O, HDO and D₂O from 0.7 μ m to 10 μ m. *Infrared Phys.*, **3**, 211-223.
- Bell, J. F.; Clark, R. N.; McCord, T. B. & Cruikshank, D. P. (1979): Reflection spectra of Pluto and the three distant satellites. *Bull. Amer. Astron. Soc.*, **11**, Abstract, 570.
- Bell, J. F.; Cruikshank, D. P. & Gaffey, M. J. (1985): The composition and origin of the Iapetus dark material; *Icarus*, **61**, 192-207.
- Bell, J. F.; Owensby, P. D., Hawke, B. R. & Gaffey, M. J. (1988): The 52-color asteroid survey – Final results and interpretation. *Lunar and Planet. Sci. XIX*, Abstract, 57-58.
- Belton, M. J. S., Klaasen, K. P., Clary, M. C., Anderson, J. L., Anger, C. D., Carr, M. H., Chapman, C. R., Davies, M. E., Greeley, R., Anderson, D., Bolef, L. K., Townsend, T. E., Greenberg, R., Head, J. W. III., Neukum, G., Pilcher, C. B., Veverka, J., Gierasch, P. J., Fanale, F. P., Ingersoll, A. P., Masursky, H., Morrison, D., Pollack, J. B. (1992): The Galileo State Imaging Experiment. *Space Sc. Rev.*, **60**, 413-455.
- Bethe, H. (1929): Splitting of terms in crystals. *Ann. Phys.*, **3**, 133-206.

- Bevington, P.R. (1969): Data Reduction and Error Analysis for the Physical Sciences. New York: McGraw-Hill.
- Boardman, J. W. (1989): Inversion of imaging spectrometry data using singular value decomposition. In: *Proceedings, IGARSS'89, 12th Canadian Symposium on Remote Sensing, 4*, 2069-2072.
- Boardman, J. W. (1992): Sedimentary facies analysis using imaging spectrometry: A geophysical inverse problem. Unpublished Ph. D. Thesis, University of Colorado, Boulder, 212.
- Boardman, J. W. (1993): Automated spectral unmixing of AVIRIS data using convex geometry concepts. In: *Summaries, Fourth JPL Airborne Geoscience Workshop, JPL Publication 93-26, 1*, 11-14.
- Boardman, J. W., and Kruse, F. A. (1994): Automated spectral analysis: a geological example using AVIRIS data, north Grapevine Mountains, Nevada. In: *Proceedings, ERIM Tenth Thematic Conference on Geologic Remote Sensing*, Environmental Research Institute of Michigan, Ann Arbor, MI, I-407-I-418.
- Bodenheimer, P., Tohline, J. E. & Black, D. C. (1980): Criteria for fragmentation in a collapsing rotation cloud. *ApJ*; **242**, 209-218.
- Bohren, C. F. & Barkstrom (1984): Theory of the optical properties of snow. *J. Geophys. Res.*, **79**, 4527-4535.
- Bohren, C. F. (1986): Applicability of effective-medium theories to problems of scattering and absorption by nonhomogeneous atmospheric particles. *J. Atmos. Sci.*, **43**, 468-475.
- Bradley, J. P. & Brownlee, D. E. (1992): An interplanetary dust particle linked directly to type CM meteorites and asteroidal origin; *Science*, **251**, 549-552.
- Bradley, J. P., Keller, L. P., Brownlee, D. E. & Thomas, K. L. (1996): Reflectance spectroscopy of interplanetary dust particles. *Meteorit. Planet. Sci.*, **31**, 394-402.
- Brown, R. H. (1982): The satellites of Uranus: Spectrophotometric and radiometric studies of their surface properties and diameters. Ph.D. thesis; Univ. of Hawaii, 158.
- Brown, R. H. (1983): The Uranien satellites and Hyperion: New spectrophotometry and compositional implications; *Icarus*, **56**, 414-425.
- Brown, R. H. & Clark, R. N. (1984): Surface of Miranda: Identifikation of water ice. *Icarus*, **58**, 288-292.
- Brown, R. H. & Cruikshank, D. P. (1983): The Uranien satellites: Surface compositions and opposition brightness surges. *Icarus*, **55**, 83-92.
- Brown, R. H. & Cruikshank, D. P. (1997): Determination of the composition and the state of icy surfaces in the outer solar system. *Ann. Rev. Earth Planet. Sci.*, **25**, 243-277.
- Brown, R. H.; Cruikshank, D. P. & Morrison, D. (1982): Diameters and albedos of the satellites of Uranus; *Nature*, **300**, 423-425.
- Brown, R. H., Foti, G., Lanzerotti, L. J., Bower, J. E., Johnson, R. E. (1987): Delayed emission of hydrogen from ion bombardement of soild methane. *Nucl. Instr. Methodes*, **B14**, 392-402.
- Brown, R. H.; Cruikshank, D. P.; Tokunaga, A. T.; Smith, R. G. & Clark, R. N. (1988): Search for volatiles on icy satellites. *Icarus*, **74**, 262-271
- Brown, R. H., Baines, K. H., Belucci, G., Bibring, J.-P., Buratti, B. J., Capaccioni, F., Cerroni, P., Clark, R. N., Coradini, A., Cruikshank, D. P., Drossart, P., Formisano, V., Jaumann, R., Lngevin, Y., Matson, D. L., McCord, T. B., Menella, V., Miller, E., Nelson, R. M., Nicholson, P. D., Sicardy, B., Sotin, C. (2004): The Cassini Visual and Infrared Mapping Spectrometer (VIMS) investigation, *Space Sci. Rev.*, **115**, 111-168.
- Brown, W. L., Augustynaik, W. M., Marcantonio, K. J., Simmons, E. H., Boring, J. W., Johnson, R. E., Reimann, C. T. (1984): Electronic sputtering of low temperature molecular solids. *Nucl. Instrum. Methods*, **198**, 1-8.
- Buratti, B. J. (1985): Application of a radiative transfer model to bright icy satellites; *Icarus*, **61**, 208-217.
- Buratti, B. J. (1991): Ganymede and Callisto: Surface textural dichotomies and photometric analysis; *Icarus*, **92**, 312-323.
- Buratti, B. J. (1995): Photometry and surface structure of the icy Galilean satellites; *J. Geophys. Res.*, **100**, 19061-19066.
- Buratti, B. J. & Veverka, J. (1984): Voyager Photometry of Rhea, Dione, Tethys, Enceladus, and Mimas; *Icarus*, **58**, 254-256.

- Buratti, B. J. & Golombek, M. (1988): Europa – Geologic implications of spectrophotometry; *Icarus*, 75, 437-449.
- Buratti, B. J.; Nelson, R. M. & Lane A. L. (1988): Surficial textures of the Galilean satellites; *Nature*, 333, 148-151.
- Buratti, B. J.; Mosher, J. A. & Johnson, T. V. (1990 a): Albedo and color maps of the Saturnian satellites; *Icarus*, 87, 339-357.
- Buratti, B. J.; Wong, F. & Mosher, J. A. (1990b): Surface properties and photometry of the Uranien satellites; *Icarus*, 84, 203-214.
- Buratti, B. J., Hicks, M. D., Tryka, K. A., Sittig, M. S., Newburn, R. L. (2002): High-Resolution 0.33-0.92 μ m Spectra of Iapetus, Hyperion, Phoebe, Rhea, Dione, and D-Type Asteroids: How are they related? *Icarus*, 155, 375-381.
- Buratti, B. J., Cruikshank, D. P., Brown, R. H., Clark, R. N., Bauer, J. M., Jaumann, R., McCord, T. B., Simonelli, D. P., Hibbitts, C. A., Hansen, G. B., Owen, T. C., Baines, K. H., Belucci, G., Bibring, J.-P., Capaccioni, F., Cerroni, P., Coradini, A., Drossart, P., Formisano, V., Langevin, Y., Matson, D. L., Mennella, V., Nelson, R. M., Nicholson, P. D., Sicardy, B., Sotin, C., Roush, T. L., Soderlund, K. & Muradyan, A. (2005): Cassini Visual and Infrared Mapping Spectrometer observations of Iapetus: Detection of CO₂. *The Astrophysical Journal*, 622, L149-L152.
- Burger, H. (1980): Untersuchungen zur Klassifizierung von Gesteinsoberflächen auf Landsat-Aufnahmen mit Hilfe von Signaturen- und Texturparametern. In: *Berliner Geowiss. Abh.*, Berlin, A, 35, 102.
- Burns, R. G. (1970): *Mineralogical Applications of crystal field theory*. Univ. Cambridge Pres, Cambridge.
- Burns, J. A. (1986): The evolution of satellite orbits. In: *Satellites* (Burns, J. A. & Matthews, M.S., eds.), Univ. of Arizona Press, 117-158.
- Burns, J. A. & Matthews, M.S. (1986): *Satellites*, Univ. of Arizona Press.
- Burns, J. A., Simonelli, D. P., Showalter, M. R., Hamilton, D. P., Porco, C. C., Throop, H., Esposito, L. W. (2004): Jupiter's ring-moon system. In: *Jupiter* (F. Bagenal, T. E. Dowling, W. B. Kinnon, eds.), 241-262.
- Calvin, W. M & Clark, R. N. (1991): Modelling the reflectance spectrum of Callisto 0.25-4.1 μ m; *Icarus*, 89, 305-317.
- Calvin, W. M & Clark, R. N. (1993): Spectral distinctions between the leading and trailing hemispheres of Callisto-New observations; *Icarus*, 104, 69-78.
- Calvin, W. M. & King, T. V. V. (1997): Spectral characteristics of iron-bearing phyllosilicates: Comparison to Orgueil (CI1), Murchison and Murray (CM2). *Meteor. & Plan. Sci*, 32, 693 – 701.
- Calvin, W. M. & Spencer, J. R. (1994): Identification of O₂ on Ganymede. *Bull. Am. Astron. Soc.*, 26, Abstract, 1159.
- Calvin, W. M., Clark, R. N., Brown, R. H. & Spencer, J. R. (1995): Spectra of the icy Galilean satellites from 0.2 to 5 μ m: A compilation, new observations and a recent summary. *J. Geophys. Res. – Planets*, 100, 19041-19048.
- Calvin, W. M., Johnson, R. E. & Spencer, J. R. (1996): O₂ on Ganymede: Spectral characteristics and plasma formation mechanisms. *J. Geophys. Res. Let.*, 23, 673-676.
- Campbell, J. P. (1987): *Introduction to Remote Sensing*. Virginia Polytechnic Institute, The Guilford Press, New York, London, 551.
- Cassen, P. M., Peale, S. & Reynolds, T. (1982): Structure and thermal evolution of the Galilean satellites. In: *Satellites of Jupiter* (D. Morrison, Ed.), Univ. of Arizona Press, Tucson, 93-128.
- Carlson, R. W., Weissman, P. R., Smythe, W. D., Mahoney, J. C. & the NIMS science and engineering teams (1992): Near-infrared mapping spectrometer experiment on Galileo; *Space Sci. Rev.*, 60, 457-502; Kluwer Academic Publishers, Belgium.
- Carlson, R. W. (1981): Spectral Mapping of Jupiter and the Galilean Satellites in the Near Infrared. In: *Imaging Spectroscopy*, SPIE Vol. 268.

- Carlson, R. W., Smythe, W., Baines, K., Barbinis, E., Becker, K., Burns, R., Calcutt, S., Calvin, W., Clark, R. N., Danielson, G., Davies, A., Drossart, P., Encrenaz, T., Fanale, F., Granahan, J., Hansen, G., Herrera, P., Hibbitts, C., Hui, J., Irwin, P., Johnson, T., Kamp, L., Kieffer, H., Leader, F., Lellouch, E., Lopez-Gautier, R., Matson, D., McCord, T. B., Mehlmann, R., Ocampo, A., Orton, G., Roos-Serote, M., Segura, M., Shirley, J., Soderblom, L., Stevenson, A., Taylor, F., Torson, J., Weir, A. & Weissman, P. (1996): Near-infrared spectroscopy and spectral mapping of Jupiter and the Galilean satellites. *Science*, 274, 385-388.
- Carlson, R. W. (1999): A tenuous carbon dioxide atmosphere on Jupiter's moon *Callisto*. *Science*, **283**, 820.
- Chandrasekhar, S. (1960): *Radiative Transfer*. Dover, Mineola, N. Y., 1960.
- Chapman, D. & Nacey, J. F. (1958): A rapid spectroscopic method for determination of water in glycerol. *The Analyst*, **83**, 377-379.
- Chapman, C. R. & McKinnon, W. B. (1986): Cratering of planetary satellites. In: *Satellites* (J. A. Burns & M.S. Matthews, eds.), Univ. of Arizona, Tucson, 802-835.
- Cheng, A. F. & Lanzarotti, L. J. (1978): Ice sputtering by radiation belt protons and the rings of Saturn & Uranus. *J. Geophys. Res.*, **83**, 2597-2602.
- Chýlek, P., Ramaswamy, V., Srivastava, V. (1983): Albedo of soot-contaminated snow. *J. Geophys. Res.*, **88**, 10837-10843.
- Clark, R. N., Singer, R. B., Owensby, P. D. & Fanale, F. P. (1980): Galilean satellites: High precision near-infrared spectrophotometry (0.625 – 2.5 μ m) of the leading and trailing sides. *Bull. Am. Astron. Soc.*, **12**, Abstract, 713-714.
- Clark, R. N. (1980a): Ganymede, Europa, Callisto, and Saturn's rings: Compositional analysis from reflectance spectroscopy, *Icarus*, **44**, 388-409.
- Clark, R. N. (1980b): Spectroscopic studies of water and water/regolith mixtures on planetary surfaces at low temperatures; PhD. Dissertation, Massachusetts Institute of Technology, Cambridge, 337.
- Clark, R. N. (1981a): The spectral reflectance of water-mineral mixtures at low temperatures. *J. Geophys. Res.*, **86**, 3074-3086.
- Clark, R. N. (1981b): Water frost and ice – The near infrared spectral reflectance 0.65 – 2.5 μ m. *J. Geophys. Res.*, **86**, 3087-3096.
- Clark, R. N. (1982): Implications of using broadband photometry for compositional remote sensing of icy objects. *Icarus*, **49**, 244-257.
- Clark, R. N. & McCord, T. B. (1980): The rings of Saturn-New infrared reflectance measurements and a 0.326-4.08 micron summary. *Icarus*, **43**, 161-168.
- Clark, R. N. & Roush, T. L. (1982): Reflectance spectroscopy: Quantitative analysis techniques for remote sensing application; *J. Geophys. Res.*, **89**, 6329-6340.
- Clark, R. N.; Brown, R. H.; Nelson, M. L. & Hayashi, J. (1983): Surface composition of Enceladus. *Bull. Amer. Astron. Soc.*, **15**, Abstract, 853.
- Clark, R. N.; Fanale, F. P. & Zent, A. P. (1983): Frost grain size metamorphism - Implications for remote sensing of planetary surfaces. *Icarus*, **56**, 233-245.
- Clark, R. N.; Brown, R. H.; Owensby, P. D. & Steele, A. (1984): Saturn's satellites: Near-infrared spectrophotometry (0.65 – 2.5 μ m) of the leading and trailing sides and compositional implications. *Icarus*, **58**, 265-281.
- Clark, R. N. & Lucey, P. G. (1984): Spectral properties of ice-particulate mixtures and implications for remote sensing. 1. Intimate mixtures; *J. Geophys. Res.*, **89**, 6341-6348.
- Clark, R. N., Fanale, F. P. & Gaffey, M. J. (1986): Surface composition of satellites. In: *Satellites* (Burns, J. & Matthews, M. S., eds.), Univ. of Arizona Press, Tucson, 437-491.
- Clark, R. N., King, T. V. V. & Gorelick, N. S. (1987): Automatic continuum analysis of reflectance spectra. In: *Proceedings, Third AIS Workshop*, 2-4 June, 1987, 138-142, JPL publ. 87-30.
- Clark, R. N., Gallagher, A. J., and Swayze, G. A. (1990): Material absorption band depth mapping of imaging spectrometer data using the complete band shape least-squares algorithm simultaneously fit to multiple

- spectral features from multiple materials. In: *Proceedings of the Third Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) workshop*, JPL Publication 90-54, 176-186.
- Clark, R. N., Swayze, G. A., Gallagher, A., Gorelick, N., and Kruse, F. A. (1991): Mapping with imaging spectrometer data using the complete band shape least-squares algorithm simultaneously fit to multiple spectral features from multiple materials. In: *Proceedings, 3rd Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) workshop*, JPL Publication 91-28, 2-3.
- Clark, R. N., Swayze, G. A., Gallagher, A., Gorelick, N. & Kruse, F. (1991): Mapping with imaging spectrometer data using the complete band shape least squares algorithm simultaneously fit to multiple spectral features from multiple materials. *Proc. of the 3rd Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Workshop*, 2-3, JPL Publ. 91-28.
- Clark, R. N., Swayze, G. A., and Gallagher, A. (1992): Mapping the mineralogy and lithology of Canyonlands, Utah with imaging spectrometer data and the multiple spectral feature mapping algorithm. In: *Summaries of the Third Annual JPL Airborne Geoscience Workshop*, JPL Publication 92-14, v 1, 11-13.
- Clark, R.N., G.A. Swayze, A.J. Gallagher, T.V.V. King, and W.M. Calvin (1993): The U. S. Geological Survey, *Digital Spectral Library: Version 1: 0.2 to 3.0 microns*, U.S. Geological Survey Open File Report 93-592, 1340.
- Clark, R. N., and Swayze, G. A. (1995): Mapping minerals, amorphous materials, environmental materials, vegetation, water, ice, and snow, and other materials: The USGS Tricorder Algorithm. In: *Summaries of the Fifth Annual JPL Airborne Earth Science Workshop*, JPL Publication 95-1, 39-40.
- Clark, R.N. (1999): Spectroscopy of Rocks and Minerals and Principles of Spectroscopy. In: *Manual of Remote Sensing*, (A.N. Rencz, ed.) John Wiley and Sons, New York, 3-58.
- Clark, R. N., Swayze, G. A., Livo, K. E., Kokaly, R. F., Sutley, S. L., Dalton, J. B., McDougal, R. R. & Gent, C. A. (2003): Imaging spectroscopy: Earth and planetary remote sensing with the USGS Tetracorder and expert systems. *J. of Geophys. Res.*, 108, E12, 5131.
- Clark, R. N., Brown, R. H., Jaumann, R., Cruikshank, D. P., Nelson, R. M., Buratti, B. J., McCord, T. B., Lunine, J., Hoefen, T., Curchin, J. M., Hansen, G. B., Hibbitts, C. A., Matz, K.-D., Baines, K. H., Belucci, G., Bibring, J.-P., Capaccioni, F., Cerroni, P., Coradini, A., Formisano, V., Lngevin, Y., Matson, D. L., Menella, V., Nicholson, P. D., Sicardy, B., Sotin, C. (2005): Compositional maps of Saturn's moon Phoebe from imaging spectroscopy, *Nature.*, **435**, 66-69.
- Clark, B. E. & Johnson, R. E. (1996): Interplanetary weathering: Surface erosion in outer space, *Eos*, 77, 141-145.
- Clemett, S.J., Maechling, C.R., Zare, R.N., Swan, P.D., Walker, R.M. (1993): Identification of complex aromatic molecules in individual interplanetary dust particles. *Science*, **262**, 721-725.
- Cody, G.D., O'D Alexander, C.M., Tera, F. (2002a): Solid state (¹H and ¹³C) NMR spectroscopy of the insoluble organic residue in the Murchison meteorite: A self consistent quantitative analysis. *Geochim. Cosmochim. Acta*, **51**, 299-303.
- Cody, G.D., O'D Alexander, C.M., Tera, F. (2002b). Comparison of the complex organic functionality of the Tagish Lake and Murchison meteorites. *Lunar. Planet. Sci. XXXIII*, Abstract, 1806.
- Cody, G.D., O'D Alexander, C.M., Tera, F. (2003). Compositional trends in chondritic organic solids within and between meteoritic groups. *Lunar. Planet. Sci. XXXIV*, Abstract ,1822.
- Collins, G. C., Head, J. W. & Pappalardo, R. T. (1998 a): Formation of Ganymede grooved terrain by sequential extensional episodes: Implications of Galileo observations for regional stratigraphy. *Icarus*, **135**, 345-359.
- Collins, G. C., Head, J. W. & Pappalardo, R. T. (2000): A global database of grooves and dark terrain on Ganymede, enabling quantitative assessment of terrain features. In: *Lunar and Plan. Sci. Conf.*, Abstract, 1034.
- Collins, G. C., Head, J. W. & Pappalardo, R. T. (1998 b): The role of extensional instability in creating Ganymede grooved terrain – Insights from Galileo high-resolution stereo imaging. *Geophys. Res. Lett.*, **25**, 233-236.

- Colthup, N. B., Daly, L. H. & Wiberly, S. E. (1964): Introduction to Infrared and Raman Spectroscopy. Academic, New York, 511.
- Colwell, J. E., Jaksosky, B. M., Sandor, B. J., Stern, S. A. (1990): Evolution of topography on comets: II. Icy craters and trenches, *Icarus*, 85, 205-215.
- Conca, J. (1981): Dark ray craters on Ganymede. In: *Lunar and Pla. Sci.*, Abstract, 172-174.
- Consolmagno, G. J. & Lewis, J. S. (1978): The evolution of icy satellite interiors and surfaces. *Icarus*, 34, 280-293.
- Cooper, J. F., Johnsen, R. E., Mauk, B. H., Garrett, H. B. & Gehrels, N. (2001): Energetic ion and electron irradiation of the icy Galilean satellites. *Icarus*, 149, 133-159.
- Coradini, A., Ceroni, P., Magni, G. & Federico, C. (1989): Formation of the satellites of the outer solar system: Source of their atmospheres. In: Origin and evolution of planetary and satellite atmospheres; 723-762.
- Coradini, A., Federico, C. Froni, O. & Magni, G. (1995): Origin and thermal evolution of icy satellites. *Surv. Geophys.*, 16, 533-591.
- Coradini, A. & Magni, G. (1997): The formation of Jupiter's satellites: Relation of present appearance with past history. In: *The three Galileos, the Man, the Spacecraft, the Telescope* (C. Barbieri, J. H. Rabe, T. V. Johnson, eds.); Kluwer Academic Publishers, 177-190.
- Croft, S. K. (1983): A proposed origin for palimpsests and anomalous pit craters on Ganymede and Callisto. *Proc. Lunar Planet. Sci. Conf. 14*, In: *J. Geophys. Symp.*, 88, B71-B89.
- Cronin, J.R., Pizzarello, S., Cruikshank, D.P. (1988): Organic matter in carbonaceous chondrites, planetary satellites, asteroids and comets. In: *Meteorites and the Early Solar System* (J. F. Kerrige & M. S. Matthews, eds.), Univ. of Arizona Press, Tucson, 819-857.
- Crowley, J. K. & Clark, R. N. (1992): AVIRIS study of Death Valley evaporite deposits using least-squares band-fitting methods. In: *Summaries of the Third Annual JPL Airborne Geoscience Workshop*, JPL Publication 92-14, v 1, 29-31.
- Crown, D. A. & Pieters, C. M. (1987): Spectral properties of plagioclase and pyroxene mixtures and the interpretation of lunar soil spectra. *Icarus*, 72, 492-506.
- Cruikshank, D. P. (1980): Near-infrared studies of the satellites of Saturn and Uranus. *Icarus*, 41, 246-258.
- Cruikshank, D. P. (1985): The small, icy satellites of Saturn; In: *Ices in the Solar System* (Klinger, J.; Benest, D.; Dollfus, A.; Smoluchowski, R.; eds.), Reidel, Dordrecht, 687-691.
- Cruikshank, D. P. (1987): Dark matter in the solar system. *Adv. Space Res.*, 7, (5)109-(5)120.
- Cruikshank, D. P. & Brown (1981): The Uranian Satellites: water ice on Ariel and Umbriel, *Icarus*, 45, 607-611.
- Cruikshank, D. P. & Brown (1982): Surface composition and radius of Hyperion, *Icarus*, 50, 82-87.
- Cruikshank, D. P. & Brown (1986): Satellites of Uranus and Neptun, and the Pluto-Charon system. In: Satellites, Burns, J. & Matthews, M. S. (eds), Univ. of Arizona Press, Tucson, 836-874.
- Cruikshank, D. P.; Jones, T. J. & Pilcher, C.B. (1978): Absorption bands in the spectrum of Io; *Astrophys. J.*, 225, L89-L92.
- Cruikshank, D. P., Howell, R. R., Geballe, T. R. & Fanale, F. B. (1985): Sulfur dioxide ice on Io; In: *Ices in the Solar System* (Klinger, J.; Benest, D.; Dollfus, A.; Smoluchowski, R. (eds), Reidel, Dordrecht, 687-691.
- Cruikshank, D. P., Brown, R. H., Calvin, W. M., Roush, T. L., Bartholomew, M. J. (1998): Ices on the satellites of Jupiter, Saturn, and Uranus. In: *Solar System Ices* (Schmitt, B., De Bergh, C., & Festou, M., eds.); Astrophysics and Space Science Library, Vol. 227, 579-606.
- Cruikshank, D. P., Ore, C. M., Roush, T. L., Geballe, T. R., Owen, T. C., de Bergh, C., Cash, M. D. & Hartmann, W. K. (2001), *Icarus*, 153, 348-360.
- Danielson, G. E., Kupferman, P. N., Johnson, T. V. & Soderbloom, L. A. (1981): Radiometric performance of the Voyager cameras. *J. Geophys. Res.*, 86, 8683-8689.
- David, D. E. & Michl, J. (1989): Sputtering of condensed gases by nuclear stopping: chemical aspects, *Prog. Solid St. Chem.*, 19, 283.
- Davidson, D. W. (1973): Clathrate-hydrates. In: *Water - A Comprehensive Treatise* (F. Franks, Ed.). Plenum, New York.

- Delitsky, M. L. & Lane, A. L. (1998): Icy chemistry on the Galilean satellites. *J. of Geophys. Res.*, **103**, 31391-31403.
- Denk, T. (1999): Galileo-SSI color observations of the icy Galilean satellites during the primary mission: (1) general comparison. *Lunar Planet. Sci.*, XXX, Abstract, 1872.
- Dessler, A. J. (1983): Physics of the Jovian magnetosphere; Cambridge Univ. Press.
- Dollfus, A. (1975) Optical photometry of the Galilean satellites of Jupiter, *Icarus*, **25**, 416-431.
- Domingue, D. L. & Hapke, B. W.: Disk-resolved analysis of European terrains; *Icarus*, **99**, 70-81, 1992).
- Domingue, D. & Verbiscer, A. (1997): Re-analysis of the solar phase curves of the icy Galilean satellites, *Icarus*, **128**, 49-74, 1997.
- Domingue, D. L.; Hapke, B. W.; Lockwood, G. W. & Thompson, D. T. (1991): Europa's phase curve – Implications for surface structure, *Icarus*, **90**, 30-42.
- Dozier, J. (1989): Remote sensing of snow in visible and near-infrared wavelengths. In: *Theory and applications of optical remote sensing*. (G. Asrar, ed.), John Wiley & Sons, 527-547.
- Drury, S. A. (1993): *Image interpretation in geology*. 2nd ed., Chapman & Hall, London, 238.
- Encrenaz, Th., Knacke, R. (1991): Carbonaceous compounds in comets: infrared observations. In: *Comets in the Post-Halley Era* (Newburn, R., Neugebauer, H., Rahe, J., eds.), Kluwer Academic, Dordrecht, 107-137.
- Fanale, F. P. & Cannon, W. A. (1979): Mars – Adsorption and capillary condensation on clays – significance for volatile storage and atmospheric history. *J. Geophys. Res.*, **84**, 8404-8414.
- Fanale, F. P.; Brown, R. H.; Cruikshank, D. P. & Clark, R. N. (1979): Significance of absorption features in Io's IR reflectance spectrum; *Nature*, **280**, 761-763.
- Faust, N. L. (1989): *Image Enhancement*. Vol. 20, Suppl. 5 of Encyclopedia of Computer Science and Technology (A. Kent & J. G. Williams, eds.), New York, Marc Decker Inc.
- Fimmel, R. O., Swindell, W., Burgess, E. (1977): Pioneer Odyssey, NASA-SP, 396.
- Fink, U.; Larson, H.P. & Gautier, T. N. III (1976a) New upper limits for atmospheric constituents on Io; *Icarus*, **27**, 439-446.
- Fink, U.; Larson, H.P.; Gautier, T. N. III & Treffers, R. R. (1976b) Infrared spectra of the satellites of Saturn: Identification of water ice on Iapetus, Rhea, Dione, and Tethys; *Astrophys. J.*; **207**, L63-L68.
- Fischer, H.-J. & Spohn, T. (1992): Thermal-orbital histories of viscoelastic models of Io (J1). *Icarus*, **56**, 1-14.
- Fomenkova, M. (1997): Organic component of cometary dust. In: *From Stardust to Planetesimals* (Y. Pendleton and A. Tielens, eds.), A.S.P. Conference Series, **122**, 415-421.
- Frank, L. A., Paterson, W. R., Ackerson, A. L. Bolton, S. J. (1997): Low-energy measurements at Ganymede with the Galileo Spacecraft: Probes of magnetic topology. *Geophys. Res. Lett.*, **24**, 2159.
- French, B. M. (1998): Traces of catastrophe. *LPI Contribution*, **954**, Lunar and Planetary Institute, Houston, 120.
- Gaffey, M. J. (1976): Spectral reflectance characteristics of the meteorite classes. *J. Geophys. Res.*, **81**, 905-920.
- Gaffey, M. J., Bell, J. F. & Cruikshank, D. P. (1989): Reflectance spectroscopy and asteroid surface mineralogy. In: *Asteroid II* (R. P. Binzel, T. Gehrels & Matthews, eds.), Univ. of Arizona Press, Tucson, 98-127.
- Gaffey, M. J., Burbine, T. H. & Binzel, R. P. (1993): Asteroid spectroscopy: Progress and perspectives. In: *Meteoritics*, **28**, 161-187.
- Gaffney, E. S. & Matson, D. (1980): Water ice polymorphs. *Icarus*, **44**, 511-519.
- Gehrels, T. (1976): Jupiter; Univ. of Arizona Press.
- Gellert, E., Smith, G. A., Wojcicki, S. (1966): *Phys. Rev. Lett*, **17**, 884.
- Giese, B., Wagner, R., Neukum, G., Pappalardo, R. T., Head, J. W. & the Galileo SSI Team (2001): The topography of bright/dark terrain on Ganymede. In: *Lunar and Planetary Sci. Conf.*, Abstract, 1751.
- Gillespie, A. R. (1980): Digital techniques of image enhancement. In: *Remote Sensing of Geology* (B. S. Siegal & A. R. Gillespie, eds.), 139-226, Wiley, New York.
- Gillespie, A. R., Abbott, E. A. & Hoover, G. (1986 a): Spectral basis for relative dating of granitic alluvial fans. In: *Geol. Soc. Am. Abs. with Programs, Owens Valley, CA*, Abstract, **18**, 614.

- Gillespie, A. R., Kahle, A. B. & Walker, R. E. (1987): Colour enhancement of highly correlated images. II. Channel ratio and "chromaticity" transformation technique. In: *Remote Sensing Env.*, New York, NY, Elsevier, **22**, 343-365.
- Goguen, J. D. (1981): A theoretical and experimental investigation of the photometric functions of particulate surfaces; Ph.D. thesis, Cornell Univ., Ithava, N. Y.
- Goguen, D. (1985): A comparison of the photometric functions of the regoliths of planets, satellite, and asteroids. *Bull. Amer. Astron. Soc.* **17**, 728.
- Golombek, M. P. (1982): Constraints on the expansion of Ganymede and the thickness of the lithosphere. *J. Geophys. Res.*, **87**, 77.
- Golombek, M. P. & Barnerdt, W. B. (1986): *Early thermal profiles and lithospheric strength of Ganymede from extensional tectonic features.* *Icarus*, **86**, 252-265.
- Goody, R. M. & Yung, Y. L. (1989): Vibration-rotation spectra of gaseous molecules. In: *Atmospheric Radiation*, 2nd ed. 67-124, Oxford Univ. Press, New York.
- Goetz, A. F. H. (1989): Spectral Remote Sensing in Geology. In: *Theory and applications of optical remote sensing* (G. Asrar, ed.), John & Wiley & Sons, 734.
- Goetz, A. F. H. & Vane, G. (1982): High spectral resolution imaging from aircraft. *Internatl. Symp. Remote Sens. Environ.*, Abstract, 37, Fort Worth, Texas.
- Goetz, A. F. H., Vane, G., Solomon, J., Rock, B. N. (1985): Imaging Spectrometry for earth remote sensing, *Science*, **228**, 1147-1153.
- Greeley, R., Fink, J. H., Gault, D. E., Guest, J. E. (1982): Experimental simulation of impact cratering on icy satellites. In: *Satellites of Jupiter* (D. Morrison, ed.), Univ. of Arizona Press, 340-378.
- Green, A. A., Berman, M., Switzer, P. and Craig, M. D. (1988): A transformation for ordering multispectral data in terms of image quality with implications for noise removal. *IEEE Transactions on Geoscience and Remote Sensing*, **26**, *1*, 65-74.
- Green, A. A. & Graig, M. D. (1985): Analysis of aircraft spectrometer data with logarithmic residuals. *Proc. Airborne Imaging Spectrometer Data Analysis Workshop*, 111-119, JPL Publ. No. 85-41.
- Greenberg, R. (1982): Orbital evolution of the Galilean satellites. In: *Satellites of Jupiter* (Morrison, Ed.), Univ. of Arizona Press, 65-92.
- Greenberg, R. & Brahic, A. (1984): Planetary Rings.
- Greenfell, T. C., Perovich, D. K., Ogren, J. A. (1981): Spectral albedoes of an alpine snowpack. *Cold Reg. Sci. Technol.*, **4**, 121-127.
- Griffith, C.; Moeckel, R.; Cruikshank, D.; Pendleton, Y.; Brown, R. H.; Owen, T.; Geballe, T.; Joyca, D. (1995): Near-IR spectra of the surfaces of Titan, Rhea, Iapetus, and Eceladus. Paper presented at conference on Solar System Ices, Toulouse 27 – 30 March.
- Grimm, R. E. & Squyres, S. W. (1985): Spectral anylsis of groove spacing on Ganymede. *J. Geophys. Res.*, **90**, 2013-2021.
- Grove, C. I., Hook, S. J., and Paylor, E. D. (1992): Laboratory reflectance spectra for 160 minerals 0.4-2.5 micrometers. JPL Publication 92-2, Jet Propulsion Laboratory, Padadena, CA.
- Grundy, W. M. & Schmitt, B. (1998): The temperature-dependent near-infrared absorption spectrum of hexagonal H₂O ice. *J. Geophys. Res.*, **103**, 25809-25822.
- Haff, P. K., Eviatar, A. & Siscoe, G. L. (1984): Ring and plasma: the enigma of Enceladus. *Icarus*, **56**, 426-438.
- Hansen, G. B. & McCord, T. B. (2000): The Distribution of Amorphous and Crystalline Ice on Ganymede; American Astronomical Society, DPS meeting #32, #39.03.
- Hansen, G. B. & McCord, T. B. (2004): Amorphous and crystalline ice on the Galilean satellites: A balance between thermal and radiolytic processes. VOL. 109, E01012, doi:10.1029/2003JE002149, 2004.
- Hansen, G. B., R. T. Pappalardo, & T. B. McCord (2001): The distribution of crystalline and amorphous ice on Ganymede, *Geophys. Res.*, Abstract, **3**, 7465.
- Hapke, B. (1963): A theoretical photometric function for the lunar surface. *J. Geophys. Res.*, **68**, 4571-86.

- Hapke, B. (1981): Bidirectional reflectance spectroscopy. 1. Theory. *J. Geophys. Res.*, 86, 3039-3054.
- Hapke, B. (1984): Bidirectional reflectance spectroscopy. 3. Correction for macroscopic roughness. *Icarus*, 59, 41-59.
- Hapke, B. (1986): Bidirectional reflectance spectroscopy. 4. The extinction coefficient and the opposition effect; *Icarus*, 67, 264-280.
- Hapke, B. (1993): Theorie of Reflectance and Emittance Spectroscopy. In: *Topics in remote sensing* (R. E. Arvidson & M. J. Rycroft, eds.), 3, 455.
- Hapke, B. & Wells, E. (1981): Bidirectional reflectance spectroscopy. 2. Experiments and observations. *J. Geophys. Res.*, 86, 3055-60.
- 1984 a
- Haring, R. A., Kofschaten, A. W., de Vries, A.E. (1984 a): Chemical sputtering by keV ions. *Nucl. Instrum. Methods*, B2, 544-549.
- Haring, R. A., Pedrys, R., Oostra, D. J., Haring, A., de Vries, A. E. (1984 b): Reactive sputtering of simple condensed gases by keV ions II: Mass spectra. *Nucl. Instrum. Methods*, B5, 476-482.
- Hartman, W. K. (1980 a): Continued low-velocity impact experiments at Ames Vertical Gun Facility: Miscellaneous results. *Lunar Planet. Sci. XI*, Abstract, 404-406.
- Hartman, W. K. (1980 b): Surface evolution of two-component stone/ice bodies in the Jupiter region, *Icarus*, 44, 441-453.
- Harland, D. M. (2000): Jupiter Odyssey – The story of NASA's Galileo Mission; Springer Verlag.
- Harris, D. C. & Bertolucci, M. D. (1978): Symmetry and Spectroscopy – An introduction to vibrational and electronic spectroscopy. Oxford Univ., New York, 549 S.
- Hawke, B. R., Cloutis, E. A., Zent, A. P. & Bell, J. F. (1983): Albedo variations in crater deposits on Ganymede: Implications for surface composition and impact processes. *Bull. Amer. Astron. Soc.*, 15, 854-855.
- Hawthorne, F. C. (1988): *Spectroscopic methods in mineralogy and geology*, Min. Soc. of Am., 18, 698.
- Hayatsu, R. E. & Anders, E. (1981): Organic compounds in meteorites and their origins. In: *Topics of Curr. Chem.*, 99, Springer-Verlag, Berlin, 1-37.
- Helfenstein, P. (1986): *Derivation and Analysis of Geological constraints on the Emplacement and Evolution of Terrains on Ganymede from Applied differential Photometry*. PhD Thesis, Brown University.
- Helfenstein, P., Wilson, L. & Walker, N. (1984): Photometric classification of terrain units on Ganymede and implications for the Galileo mission. *Proc. Lunar Planet. Sci. Conf.*, 15, 265-300.
- Hellwege, K. H., Lesch, W., Plihal, M & Schaak, G. (1970): Zwei-Photonen-Absorptionsspektren und Dispersion der Schwingungszweige in Kristallen der Kalkspatstruktur. *Z. Physik*, 232, 61 – 86.
- Hendrix, A. R., Barth, C. A., Hord, C. W. (1999 a): Ganymede's ozon like absorber: Observations by the Galileo Ultraviolet Spectrometer. *J. Geophys. Res.*, 104, 14169-14178.
- Hendrix, A. R., Barth, C. A., Stewart, A. I. F., Hord, C. W., Lane, A. L. (1999 b): Hydrogeneperoxide on the icy Galilean satellites. *Lunar and Plan. Sc. Conf.*, Abstract, 2043.
- Herzberg, G. (1945): Molecular spectra and molecular structure. In: *II. Infrared and Raman spectra of polyatomic molecules* (Van Nostrand Reinhold, Ed.), New York, 632.
- Herzberg, G. (1950): Molecular spectra and molecular structure. In: *I. Spectra of diatomic molecules*, 2nd edition (Van Nostrand Reinhold, Ed.), New York, 658.
- Hibbitts, C. A., McCord, T. B. & Hansen, G. B. (2000): Distributions of CO₂ and SO₂ on the surface of Callisto; *J. Geophys. Res.*, 105, E9, 22,541-22,557.
- Hibbitts, C. A. (2001): Carbon dioxide and sulphur dioxide on the surfaces of the Galilean satellites Ganymede and Callisto, *Dissertation*, Univ. of Hawai, 259.
- Hibbitts, C. A., Hansen, G. B., McCord, T. B. & Stephan, K. (2003 a): Impactor contamination of dark ray craters on Ganymede. In: *Lunar Planet. Sci. Conf.*, Abstract, 1925.
- Hibbitts, C. A., Pappalardo, R. T., McCord, T. B. & Hansen, G. B. (2003 b): Carbon dioxide on Ganymede. *J. Geophys. Res.*, 2-1.

- Hiesinger, H. (1999): *Geochemische und stratigraphische Untersuchungen lunarer Basalte mit Methoden der Fernerkundung*. Dissertation, Institut für Weltraumsensorik und Planetenerkundung, DLR Berlin, 178 S.
- Hillier, J., Helfenstein, P., and Veverka, J. (1989): Miranda: Colorful and not so dark. *Icarus*, **125**, 348-363.
- Hillier, J.; Helfenstein, P.; Verbicer, J.; Veverka, J.; Brown, R. H.; Goguen, J. and Johnson, T. V. (1990): Voyager disk-integrated photometry of Triton; *Science*, **250**, 419-421.
- Hillier, J.; Helfenstein, P.; Veverka, J. (1994): Ganymede polar caps – The thickness from photometry; paper presented at Icy Galilean Satellites Conference, San Juan Capistrano, Calif., Feb. 1-3.
- Hillier, J.; Helfenstein, P.; Veverka, J. (1996): Latitude variations of the polar caps on GAnymede. *Icarus*, **124**, 308-317.
- Hiroi, T. M., Zolensky, E., Pieters, C. M. & Lipschutz, M. E. (1996): Thermal metamorphism of C, G, B, and F asteroids seen from the 0.7 μ m, 3 μ m and UV absorption strengths in comparison with carbonaceous chondrites. In: *Meteoritics and Planetary Science*, **31**, 321-327.
- Hiroi, T., Tonui, E., Pieters, C. M., Zolensky, M. E., Ueda, Y., Miyamoto, M., Sasaki, S. (2005): Meteorite WIS91600: A new sample related to a D- or T-type asteroid. *Lunar Planet. Sci. XXXVI*, Abstract, 1564.
- Hobbs, P. V. (1974): *Ice Physics*. Oxford Univ. Press, London, New York, 54-59.
- Hotelling, H. (1933): Analysis of a complex of statistical variables into principal components. *J. educ. Psychol.*, **24**, 417-441, 498-520.
- Hudson, R. L. & Moore, M. H. (1995): Laboratory studies of the formation of methanol and other organic molecules by water + carbon monoxide radiolysis: Relevance to comets, icy satellites and interstellar ices. *Icarus*, **140**, 451-461.
- Hunt, G. R. (1980): Electromagnetic radiation: The communication link in remote sensing. In: *Remote Sensing in Geology* (B.S. Siegal & A. R. Gillespie, eds.), Wiley, New York, S. 5-45.
- Hunt, G. R. (1977): Spectral signatures of particulate minerals in the visible and near infrared. *Geophysics*, **42**, 501-513.
- Hunt, G. R. & Salisbury, J. W. (1970): Visible and near-infrared spectra of minerals and rocks: 1. Silicate minerals. *Modern Geol.*, **1**, 283-300.
- Hunt, G. R. & Ashley (1979): Spectra of altered rocks in the visible and near infrared. *Econ. Geol.*, **74**, 1613-1628.
- Huntington, J. F., Green, A. A. & Graig, M. D. (1986): Preliminary geological investigation of AIS data at Mary Kathleen, Queensland, Australia, *Proc. 2nd Airborne Imaging Spectrometer Data Analysis Workshop*, 109-131, JPL Publ. 86-35.
- Irmscher, J. (1990): *Lexikon der Antike*. Bibliographisches Institut, 10. Aufl., Leipzig:.
- Jaumann, R. (1989): Spektrophotometrische Analyse der chemisch-mineralogischen Zusammensetzung lunarer Oberflächenmaterialien. *Dissertation* der Univ. München im Fachbereich Geowissenschaften, 284.
- Jepsen, P. L., Mosher, J. A., Yagi, G. M., Avis, C. C., Lorre, J. J. & Garneau, G. W. (1980): Voyager Image Processing at the Image Processing Laboratory. *J. of the British Interplanet. Soc.*, **33**, 315-322.
- Jewitt, D. C., Sheppard, S. & Porco, C. C. (2004): Jupiter's Outer Satellites and Trojans. In: *Jupiter* (F. Bagenal, T. E. Dowling, W. B. Kinnon, eds.), 263-280
- Johnson, R. E. (1985): Polar frost formation on Ganymede, *Icarus*, **62**, 344-347.
- Johnson, R. E. (1998): Sputtering and desorption from icy surfaces. In: *Solar System Ices*, ASSL, 303.
- Johnsen, R. E. & Jesser, W. A. (1997): O₂/O₃ microatmosphere in the surface of Ganymede. *Astrophys. J.*, **480**, L79-L82.
- Johnson, R. E. (1998): Sputtering and desorption from icy surfaces. In: *Solar System Ices*, ASSL, 303.
- Johnson, R. E., Quickenden, T. I., Cooper, P. D., McKinley, A. J. & Freeman, C. (2003): The production of oxidants in Europa's surface. *Astrobiol.*, **3**, 823-850.
- Johnson, T. V. & Fanale, F. P. (1973): Optical properties of carbonaceous chondrites and their relationship to asteroids. *J. Geophys. Res.*, **78**, 8507-8518.

- Johnson, T. V. & McCord, T. B. (1971): Spectral geometric albedo of the Galilean satellites, 0.3 to 2.5 μ m. *Astrophys. J.*, **169**, 589-594.
- Johnson, T. V.; Veeder, G. J. & Matson, D. L. (1975): Evidence for frost on Rhea's surface; *Icarus*, **24**, 428-432.
- Johnson, T. V., Soderbloom, L. A., Mosher, J. A., Danielson, G. E., Cook, A. F. & Kuperman, P. (1983): Global multispectral mosaics of the icy Galilean satellites. *J. Geophys. Res.*, **88**, 5789-5805.
- Johnson, T. V., Yeates, C. M., Young, R. (1992): Space Science Reviews volume on the Galileo Mission overview; *Space Sci. Rev.*, **60**, 3-21.
- Jones, K. B., Head, J. W., Papalardo, R. T. & Moore, R. M. (2003): Morphology and origin of palimpsests on Ganymede and origin of palimpsests on Ganymede from Galileo observations, *Icarus*, **164**, 197-212.
- Kargel, J. S. (1998): Physical chemistry of ices in the outer solar system. In: *Solar System Ices* (B. Schmitt, C. de Bergh & M. Festou, eds.), Kluwer, 3-32.
- Kargel, J. S., Kaye, J. Z., Head, J. W. III, Marion, G. M., Sassen, R., Crowley, J. K., Ballesteros, O. P., Grant, S. A. & Hogenboom, D. L. (2000): Europa's crust and ocean: origin, composition, and prospects for life. *Icarus*, **148**, 226-265.
- Keller, L.P., & Flynn, G.J. (2001): Matrix mineralogy of the Tagish Lake carbonaceous chondrite: TEM and FTIR studies. *Lunar Planet. Sci. XXXII*, Abstract, 1639.
- Keller, L. P., Thomas, K. L. & McKay (1992): An interplanetary dust particle with links to CI chondrites; *Geochim. Cosmochim. Acta*, **56**, 1409-1412.
- Kieffer, S. W. (1982): Dynamics and thermodynamics of volcanic eruptions: Implications for the plumes on Io; In *Satellites of Jupiter*; Morrison, D. (ed), University of Arizona, Tucson, 646-723.
- Kieffer H. H. & Smythe, W. D. (1974): Frost spectra: Comparison with Jupiter's satellites. *Icarus*, **21**, 506-512.
- King, T. V. V., Pieters, C. M., Sandlin, D. L. (1981): Particulate mineral mixtures: The relation of albedo and apparent absorption band strengths. *Lunar and Planetary Science XII*, Lunar and Planetary Inst., Houston, 547 – 549.
- Kirk, R. L. & Stevenson, D. J. (1987): The thermal evolution of a differentiated Ganymede and implications for surface features. *Icarus*, **69**, 91-134.
- Kissel, J., Krueger, F.R. (1987): The organic component in dust from comet Halley as measured by the PUMA mass spectrometer on board Vega 1. *Nature*, **326**, 755-760.
- Kivelson, M. G.; Khurana, K. K., Russel, C. T., Walker, R. J., Warnecke, Coroniti, F. V., Polanskey, C., Southwood, D. J. & Schubert, G. (1996): Discovery of Ganymede's magnetic field by the Galileo spacecraft, *Nature*, **384**, 537.
- Kivelson, M. G.; Khurana, K. K.; Coroniti, F. V., Joy, S., Russel, C. T., Walker, R. J., Warnecke, J., Bennett, L.; Polanskey, C. (1997a): The magnetic field and magnetosphere of Ganymede, *Geophys. Res. Lett.*, **24**, 2155.
- Kivelson, M. G., Warnecke, J., Bennett, L., Joy, L., Khurana, K. K., Linker, J. A., Russel, C. T., Walker, R. J., Polanskey, C. (1998): Ganymede's magnetosphere: Magnetometer overview. *J. Geophys. Res.*, **103**, 19963-19972.
- Kivelson, M. G., Khurana, K. K., Russel, C. T., Volwerk, M., Walker, R. J. & Zimmer, C. (2000): Galileo magnetometer measurements: A stronger case for a subsurface ocean at Europa, *Science*, **289**, 1340-1343.
- Kivelson, M. G., Khurana & Volwerk, M. (2002 b): The permanent and inductive magnetic moments of Ganymede, *Icarus*, **157**, 507-522.
- Klaasen, K. P., Clary, M. C., Janesick, J. R. (1984): Charge-coupled device television camera for NASA's Galileo mission to Jupiter. *Optical Engineering*, **23/3**, 334-342.
- Korb, A. R., Dybwad, P., Wadsworth, W., and Salisbury, J. W., 1996, 1996, Portable FTIR spectrometer for field measurements of radiance and emissivity: *Applied Optics*, v. 35, p. 1679-1692.
- Kouchi, A. & Kuroda, T. (1990): Amorphization of cubic ice by ultraviolet irradiation, *Nature*, **344**, 134.
- Kruse, F. A., Raines, G. L. & Watson, K. (1985): Analytical techniques for extracting mineralogical information from multichannel airborne imaging spectrometer data. *Proc. Airborne Imaging Spectrometer Data Analysis Workshop*, 105, JPL Publ. 85-41.

- Kruse, F. A., Calvin, W. M. & Seznec, O. (1988): Automated extraction of absorption features from Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) and Geophysical and Environmental Research Imaging Spectrometer (GERIS) data. *Proc. Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) Performance Evaluation Workshop*, 62-75, JPL Publ. 88-38.
- Kuiper, G. P. (1957): Infrared observations of planets and satellites. *Astron. J.*, **62**, Abstract, 295.
- Kuiper, G. P. (1961): Limits of completeness. In: Planets and satellites (G. P. Kuiper & B. M. Middlehurst, eds.), Univ. of Chicago Press, Chicago, III, 575-591.
- Kraus, K. (1990): Auswertung photographischer und digitaler Bilder. In: *Fernerkundung*, 2, F. Dümmlers Verlag, Bonn, 610.
- Kruse, F. A., Raines, G. L., Watson, K. (1985): Analytical techniques for extracting geological information from multichannel airborne spectroradiometer and airborne imaging spectrometer data: in Proceedings, International Symposium on Remote Sensing of Environment, Thematic Conference on Remote Sensing for Exploration Geology, 4th, Environmental Research Institute of Michigan, Ann. Arbor, 309 – 324.
- Kruse, F. A., Lefkoff, A. B., Boardman, J. B., Heidebrecht, K. B., Shapiro, A. T., Barloon, P. J., and Goetz, A. F. H. (1993): The Spectral Image Processing System (SIPS)-Interactive Visualization and Analysis of Imaging Spectrometer Data. In: Remote Sensing of Environment, Special issue on AVIRIS, May-June 1993, v. 44, p. 145-163.
- Lane, A. L., Nelson, R. M. & Matson, D. L. (1981): Evidence for sulphur implantation in Europa's UV absorption band, *Nature*, 292, 38-39.
- Lancaster, P. & Salkauskas, K. (1986): *Curve and Surface Fitting (An Introduction)*. San Diego: Academic Press.
- Lanzarotti, L. J.; Brown, W. L.; MacLennan, C. G.; Cheng, A. F.; Krimigis, S. M. & Johnson, R. E. (1987): Effects of charged particle on surfaces of the satellites of Uranus; *J. Geophys. Res.*, 92, 14949-14957.
- Laplace, P. S. (1805): *Mécanique Celeste*, vol. 4.
- Lanzarotti, L. J., Brown, W. L. & Marcantonio, K. J. (1987): Experimental study of erosion of methane ice by energetic ions and some consideration for astrophysics. *Astrophys. J.*, 313, 910-919.
- Lebofsky, L. A. (1977): Stability of frost in the solar system. *Nature*, 269, 785.
- Lebofsky, L.A. (1980): Infrared reflectance spectra of asteroids - A search for water of hydration. *Astron. J.*, **85**, 573-585.
- Lebofsky, L. A. & Feierberg, M. A. (1985): 2.7- to 4.1- μ m Spectrophotometry of Icy Satellites of Saturn and Jupiter. *Icarus*, 63, 237-242.
- Lebofsky, L. A., Jones, T. D., Owensby, P. D., Feierberg, M.A. & Consolmagno, G. J. (1990): The nature of low albedo asteroids from 3 μ m spectrophotometry. *Icarus*, 83, 16-26.
- Leto, G., Palumbo, M. E., Strazulla, G. (1996): Structural characteristics of irradiated and unirradiated ices. *Nucl. Instrum. Methods Phys., Sect. B*, **116**, 49.
- Lewis, J. S. (1974): The temperature gradient in the solar nebula. *Science*, **186**, 440-443.
- Lewis, J. S. (1997): *Physics and Chemistry of the Solar System*; Univ. of Arizona Press, Tucson, 591 S.
- Lillesand, T. M. & Kieffer, R. W. (1994): *Remote Sensing and Image Interpretation*. John Wiley & Sons, Inc., New York.
- List, F. K. (1992): Remote Sensing Data Acquisition Systems: Photography, Scanners, and Microwave System. In: *Berliner Geowiss. Abh.*, **D, 1**, 37-49.
- Lucchitta, B & Ferguson, H. (1988): „Moat“ craters compared with palimpsests and basins. *Lunar and Planet. Sci. Conf.*, **XIX**, Abstract, 701-701.
- Lumme, K. & Bowell, E.: Radiative transfer in the surfaces of atmosphereless bodies, *Astron. J.*, 86, 1694-1704, 1981;
- Lunine, J. I. & Stevenson, D. J. (1982): Formation of the Galilean satellites in a gaseous nebula; *Icarus*, 52, 14-39.

- Lunine, J. I., Coradini, A., Gautier, D., Owen, T. B., Wuchterl, G. (2004): The origin of Jupiter. In: *Jupiter* (F. Bagenal, T. E. Dowling, W. B. Kinnon, eds.), 19-34.
- Magni, G. & Coradini, A. (2003): Jupiter and regular satellite formation. *Icarus*; im Druck.
- Malhotra, R. (1991): Tidal origin of the Laplace resonance and the resurfacing of Ganymed. *Icarus*, **94**, 399-412.
- Malinowski, E. R. (1977): Theory of Error in Factor Analysis. *Analytical Chemistry*, **49**, 606-617.
- Matich, A. J., Bakker, M. G., Lennon, D., Quickenden, T. & Freeman, C. (1993): O₂ luminescence from UV-excited H₂O and D₂O ices. *J. Phys. Chem.*, **97**, 10539-10553.
- Mazer, A. S., Martin, M., Lee, M., and Solomon, J. E. (1988): Image Processing Software for Imaging Spectrometry Analysis: Remote Sensing of Environment, *24, 1*, 201-210.
- Matson, D. L. & Brown, R. H. (1988): Solid state greenhouses and their implications for icy satellites; *Icarus*, **77**, 67-81.
- Meltzer, M. (2004): History of the Galileo Mission to Jupiter; NASA History Office.
- McCord, T. B.; Clark, R. N., Hawke, B. R., McFadden, L. A., Owensby, P. D. Pieters, C. M. & Adams, J. B. (1981): Moon: Near-infrared reflectance, a first look. *J. Geophys. Res.*, **86**, 10833-10892.
- McCord, T. B.; Soderblom, L. A.; Carlson, R. W.; Fanale, F. P.; Lopes-Gautier, R.; Ocampo, A. C.; Forsythe, J.; Campbell, B.; Granahan, J. C.; Smythe, W. D.; Weissman, P. R.; Becker, K. J., Edwards, K.; Kamp, L.; Lo, J.; Mehlman, R.; Torson, J.; Danielson, G. E.; Matson, D. L.; Kieffer, H. H.; Johnson, T. V. (1994): Galileo infrared imaging spectrometry measurements at the Moon; *J. Geophys. Res.*, **99**, E3, 5587-5600.
- McCord, T. B.; Carlson, R. W.; Smythe, W. D.; Hansen, G. B.; Clark, R. N.; Hibbitts, C.A.; Fanale, F. P.; Granahan, J. C.; Segura, D. L.; Matson, D. L.; Johnson, T. V.; Martin, P. D. and the NIMS Team (1997): Organics and other molecules in the surfaces of the icy Galilean satellites; *Science.*, **278**, 271-275.
- McCord, T. B.; Hansen, G. B.; Clark, R. N.; Martin, P. D.; Hibbitts, C.A.; Carlson, R. W.; Fanale, F. P.; Granahan, J. C.; Segura, D. L.; Matson, D. L.; Johnson, T. V.; Carlson, R. W.; Smythe, W. D.; Danielson, G. E. and the NIMS Team (1998 a): Non-water ice constituents in the surface material of the icy Galilean satellites from the Galileo near-infrared imaging spectrometer investigation. *J. Geophys. Res.*, **103**, 8603-8626.
- McCord, T. B.; Hansen, G. B.; Shirley, J. H.; Carlson, R. W. (1999): Discussion of the 1.04- μ m water ice absorption band in the Europa NIMS spectra and a new NIMS calibration; *J. Geophys. Res.*, **104**, 27157-27162.
- McCord, T. B.; Hansen, G. B.; Hibbitts, C.A. (2001): Hydrated salt minerals on Ganymede's surface: evidence of an ocean below; *Science.*, **292**, 1523-1525.
- McEwen, S. M. (1986): Tidal reorientation and the fracturing of Jupiter's moon Europa, *Nature*, **321**, 49-51.
- McFadden, L.A., Bell, J. F., McCord, T. B. (1980): Visible spectral reflectance measurements (0.33 – 1.1 microns) of the icy Galilean satellites at many orbital phase angles. *Icarus*, **44**, 410-430.
- McKinnon, W. B. & Melosh, H. J. (1980): Evolution of planetary lithospheres: Evidence from multiringed structures on Ganymede and Callisto. *Icarus*, **44**, 454-471.
- McKinnon, W. B. & Parmentier, E. M. (1986): Ganymede and Callisto. In: *Satellites* (J. A. Burns & M. S. Matthews, eds.), Univ. of Arizona Press, 718-763.
- Mc Millan, P. F. & Hofmeister, A. M. (1988): Infrared and Raman Spectroscopy. In: *Spectroscopic methods in mineralogy and geology* (F. C. Hawthorne, Ed.), Min. Soc. of Am., **18**, 698.
- Melosh, H. J. (1989): *Impact cratering: A Geologic Process*. Oxford Univ. Press.
- Mendell, W. W. & Morris, R. V. (1982): Band quantification in reflectance spectroscopy. *Lunar Plan. Sci.*, **XIII**, 513-514.
- Mikouchi, T., Kasama, T., Zolensky, M.E., Tachikawa, O. (2001): Transmission electron microscopy of the matrix minerals in the Tagish Lake carbonaceous chondrite. *Lunar Planet. Sci. XXXII*, Abstract, 1371.
- Miller, R. G. J. & Willis, H. A. (1956): Quantitative analysis in the 2- μ m region applied to synthetic polymers. *J. Appl. Chem.*, **6**, 385-391.

- Miller, S. L. (1985): Clathrate hydrates in the Solar System. In: *Ices in the Solarsystem* (Klinger, J., ed.), D. Reidel, Norwell, Mass., 59-79.
- Mills, R. L. & Thompson, D. T. (1975): UVB photometry of the Galilean satellites, *Icarus*, **26**, 408-419.
- Minneart, M. (1941): The reciprocity principle in lunar photometry. *Astrophys. J.*, **93**, 403.
- Minneart, M. (1961): Photometry of the Moon. In: *The Solar System III. Planets and Satellites* (G. P. Kuiper und B. M. Middlehurst, eds.), Univ. of Chicago Press, Chicago.
- Mizuno, H. (1980): Formation of the Giant planets. *Prog. Theor. Phys.*, **64**, 544-557.
- Mishima, O. (1996): Relationship between melting and amorphization of ice; *Nature*, 384, 546-549.
- Moore, J. M., Mellon, M. T. & Zent, A. P. (1996): Mass wasting and ground collapse in terrains of volatile-rich deposits as a solar system-wide geological process: The pre-Galileo view. *Icarus*, **122**, 63-78, 1996.
- Moore, J. M., Asphaug, E., Morrison, D., Spencer, J. R., Chapman, C. R., Bierhaus, B., Sullivan, R. J., Chuang, F. C., Klemaszewski, J. E., Greeley, R., Bender, K. C., Geissler, P. E., Helfenstein, P. & Pilcher, C.B. (1999): Mass movements and landform degradation on the icy Galilean satellites: results of the Galileo Nominal Mission, *Icarus*, **140**, 294-312.
- Moore, J. M., Chapman, C. R., Bierhaus, E. B., Greeley, R., Chuang, F. C., Klemaszewski, J., Clark, R. N., Dalton, J. B., Hibbitts, C. A., Schenk, P. M., Spencer, J. R., Wagner, R. (2004): Callisto. In: *Jupiter* (F. Bagnenat, T. Dowling, W. McKinnon, eds.), 397-426.
- Moroz, L., Starukhina, L., Strazulla, G., Baratta, G., Dotto, E., Arnold, G., Barucci, A. (2005): Optical Alteration of Complex Organics Induced by Ion Irradiation - II. Implications for Primitive Small Bodies of Solar System. *Icarus*, submitted.
- Morris, R. V., Neely, S. C. & Mendell, W. W. (1982): Application of Kubelka-Munk theory of diffuse reflectance to geologic problems: The role of scattering. *Geophys. Res. Lett.*, **9**, 113-116.
- Morrison, D.; Cruikshank, D. P.; Pilcher, C. B. & Rieke, G. H. (1976): Surface compositions of the satellites of Saturn from infrared photometry. *Astrophys. J.*, **207**, L213-L216.
- Morrison, D. & Samz, J. (1980): Voyage to Jupiter. NASA-SP439.
- Morrison, D.; Johnson, T. V.; Shoemaker, E. M.; Soderbloom, L. A.; Thomas, P.; Veverka, J. & Smith, B. A. (1984): Satellites of Saturn: Geological perspective; In: *Saturn*; Gehrels, T. & Matthews, M. (eds), Univ. of Arizona, Tucson, 609-639.
- Moore, J. M., Mellon, M. T., Zent, A. P. (1996): Mass wasting and ground collapse in terrains of volatile-rich deposits as a solar system-wide geological process: The pre-Galileo view, *Icarus*, **122**, 63-78.
- Morrison, D.; Owen, T. & Soderbloom, L. A. (1986): The satellites of Saturn. In: *Burns, J. & Matthews, M. S.* (eds) *Satellites*, Univ. Arizona Press, Tucson, 764-801.
- Moroz, V. I. (1965): Infrared spectrophotometry of the Moon and the Galilean satellites of Jupiter. *Astron. Z.*, **42**, 1287-1295 (in Russian), *Trans. Soviet. Astron. A. J.*, **9**, 999-1006.
- Mustard, J. F. & Pieters, C. M. (1987 a): Abundance and distribution of serpentinized ultramafic microbreccia in Moses Rock dike: quantitative application of mapping spectrometer data. *J. Geophys. Res.*, **92**, 10376-10390.
- Mustard, J. F. & Pieters, C. M. (1987 b): Quantitative abundance estimated from bidirectional reflectance measurements. *Proc. Lunar Plan. Sci. Conf. 17th*. In: *J. Geophys. Res.* **92**, E617-E626.
- Mustard, J. F. & Pieters, C. M. (1989): Photometric phase functions of common geologic minerals and applications to quantitative analysis of mineral mixture reflectance spectra. *J. Geophys. Res.*, **94**, 13619-13634.
- Nash, D. B. & Fanale, F. P. (1977): Io's surface composition based on reflectance spectra of sulphur/salt mixtures and proton irradiation experiments. *Icarus*, **31**, 40-80.
- Nash, D. B. & Howell, R. R. (1989): Hydrogen sulfide on Io: Evidence from telescope and laboratory infrared spectra; *Science*, **244**, 454-457.
- Mortimer, C. E. (1983): *Chemie. Das Basiswissen der Chemie in Schwerpunkten*. Georg Thieme Verlag, Stuttgart, New York, 637.

- Müller, S. & McKinnon, W. B. (1988): Three-layered models of Ganymede and Callisto: Compositions, structures, and aspects of evolution. *Icarus*, 76, 437-464.
- Nagel, K., Breuer, D. & Spohn, T. (2003): A model for the interior structure, evolution and differentiation of Callisto. *Icarus*, submitted.
- Nash, D. B. & Nelson, R. M. (1979): Spectral evidence for sublimates and adsorbates on Io; *Nature*, 280, 763-766.
- Nash, D. B.; Carr, M. H.; Gradie, J.; Hunten, D. M. & Yoder, C. F. (1986): Io; In: *Satellites*; Burns, 1986
Burns, J. A. & Matthews, M. S. (eds), Univ. of Arizona, Tucson, 629-688.
- Nasau, K. (1980): The causes of color. *Sci. Am.*, October, 124-154.
- Nelson, R. M., McCord, T. B., Clark, R. N., Johnson, T. V., Matson, D. L., Mosher, J. A. & Soderbloom, L. A. (1986): Europa – Characterization and interpretation of global spectral surface units. *Icarus*, 65, 129-151.
- Nelson, R. M., Lane, A. L., Matson, D. L., Veeder, G. J., Buratti, B. J. and Tedesco, E. F. (1987 a): Spectral geometric albedos of the Galilean satellites from 0.24 to 0.34 micrometer: Observations with the International Ultraviolet Explorer, *Icarus*, 72, 358-380.
- Nelson, R. M. ; Buratti, B. J.; Wallis, B. D.; Lane, A.L.; West, R. A.; Simmons, K. E.; Hord, C. W. & Esposito, L. W. (1987 b): Voyager 2 photopolarimeter observations of the Uranian satellites ; *J. Geophys. Res.*, 92, 14905-14910.
- Neukum, G. (1997): Bombardement history of the jovian system. In: *The three Galileos: The Man, the Spacecraft, the Telescope* (C. Barbieri, J. Rabe, T. V. Johnson & A. M. Sohus, eds.), Kluwer, 201-212.
- Neukum, G., Wagner, R., Wolf, U., Ivanow, B. A., Head, J. W., Pappalardo, R. T., Klemaszewski, J. E., Greeley, R., Belton, M. J. S., and the Galileo SSI Team (1998): Cratering chronology in the jovian system and derivation of absolute ages. In: Lunar and Planetary Science Conference, abstract, 1742.
- Nimmo, F., Pappalardo, R. T. & Giese, B. (2002): Effective elastic thickness and heat flux estimates on Ganymede. *Geophys. Res. Lett.*, 29, 62-1.
- Noll, K. S., Johnson, R. E., Lane, A. L., Dominique, D. L., Weaver, H. A. (1996): Detection of ozone on Ganymede. *Science*, 273, 341-343.
- Noll, K. S.; Roush, T. L.; Cruikshank, D. P.; Pendleton, Y. L. & Johnson, R. E. (1997b): Detection of ozone on Saturn's satellites Rhea and Dione. *Nature*, 388, 45-47.
- Oberst, J., Schreiner, B., Giese, B., Neukum, G., Head, J. W., Pappalardo, R. T. & Helfensteins, P. (1999): The distribution of bright and dark material on Ganymede and its relations to surface elevation and slopes, *Icarus*, 140, 283-293.
- Ojakangas, G. W. & Stevenson, D. J. (1989): Thermal state of an ice shell on Europa. *Icarus*, 81, 220-241.
- Orton, G. S., Spencer, J. R., Travis, L. D., Martin, T. Z. & Tamppari, L. K. (1996): Galileo Photopolarimeter-Radiometer observations of Jupiter and the Galilean satellites. *Science*, 274, 389-391.
- Ostro, S. J., Campbell, D. B., Simpson, R. A., Hudson, R. S., Chandler, J. F., Rosema, K. D., Shapiro, I. I., Standish, E. M., Winkler, R., Yeomans, D. K., Velez, R. & Goldstein, R. M. (1992): Europa, Ganymede, Callisto – New radar results from Arecibo & Goldstone, *J. Geophys. Res.*, 97, 18277-18244.
- Ott, N. (2001): GIS-Modellierung und Klassifizierung von geophysikalischen, geologischen und Fernerkundungs-Daten aus den südlichen Red Sea Hills (Sudan), In: *Berliner Geowissenschaftliche Abhandlungen*, D, 15, 131.
- Owen, T. (1985): The atmospheres of icy bodies. In: *Ices in the Solarsystem* (NATO ASI Series) (J. Klinger, Ed.). Reidel, Dordrecht.
- Owen, T. C., Cruikshank, D. P., Dalle Ore, C. M., Geballe, T. R., Roush, T. L., de Bergh, C., Meier, R., Pendleton, Y. J. & Khare, B. N. (2001): Decoding the Domino: The Dark Side of Iapetus. *Icarus*, 149, 160-172.
- Palumbo, M. E. & Strazulla, G. (1993): The 2140 cm⁻¹ band of frozen CO: laboratory experiments and astrophysical applications. *A&A*, 269, 568-580.

- Pappalardo, R. T., Head, J. W., Collins, G. C., Kirk, R. L., Neukum, G., Oberst, J., Giese, B., Greeley, R., Chapman, C. R., Helfenstein, P., Moore, J. M., McEwen, A., Tufts, B. R., Senske, D. A., Breneman, H. H. & Klaasen, K. (1998 a): Grooved terrain on Ganymed: First results from Galileo high-resolution imaging. *Icarus*, **135**, 276-302.
- Pappalardo, R. T. (1999): Ganymed and Callisto. In: *The New Solar System* (J. K. Beatty et al., eds.), 4th ed., Sky Publishing, Cambridge, MA, 263-275.
- Pappalardo, R. T., Collins, G. C., Head, J. W. III, Helfenstein, P., McCord, T. B., Moore, J. M., Prockter, L. M., Schenk, P., Spencer, J. R. (2004): Geology of Ganymede. In: *Jupiter* (F. Bagenal, T. Dowling, W. B. McKinnon, eds.), Cambridge Univ. Press, 363-396.
- Parkin, K. M. & Burns, R. G. (1980): High temperature crystal field spectra of transition metal bearing minerals: Relevance to remote sensed spectra of planetary surfaces. *Proc. Lunar Plant. Sci. Conf.*, **XI**, 731-755.
- Parmentier, E. M. & Head, J. W. (1979 a): Internal processes affecting surfaces of low-density satellites: Ganymede and Callisto. *J. Geophys. Res.*, **84**, 6263-6276.
- Parmentier, E. M., Squyres, S. W., Head, J. W. & Allison, M. L. (1982): The tectonics of Ganymede. *Nature*, **295**, 290-293.
- Passey, Q. R. & Shoemaker, E. M. (1982): Craters and basins on Ganymede and Callisto: Morphological indicators of crustal evolution. In: *Satellites of Jupiter* (D. Morrison, Ed.), Univ. of Arizona Press, 379-434.
- Patel, J. G., Pappalardo, R. T., Head, J. W., Collins, G. C., Hiesinger, H. (1999): Topographic wavelengths of Ganymede groove lanes from Fourier analysis of Galileo images. *J. Geophys. Res.*, **104**, 24057-24074.
- Peale, S. J., Cassen, P. M. & Reynolds, R. T. (1979): Melting of Io by tidal dissipation. *Science*, **203**; 892-894.
- Peale, S. J. (1986): Orbital resonances, unusual configurations, and exotic rotation states among the planetary satellites. In: *Satellites* (Burns, J. A. & Matthews, M.S., eds.); Univ. of Arizona Press, 159-223.
- Peale, S. J. & Lee, M. H. (2002): A primordial origin of the Laplace relation among the Galilean satellites. *Science*, **298**, 593-597.
- Peale, S. J. (1999): Origin and evolution of natural satellites; *ARA&A*, **37**, 533-602.
- Pendleton, Y.J., Chiar, J.E. (1997): The nature and evolution of interstellar organics. In: *From Stardust to Planetesimals* (Pendleton, Y., Tielens, A., eds.), A.S.P. Conference Series, **122**, 179-200.
- Pendleton, Y.J., Allamandola, L. J. (2002): The Organic refractory material in the diffuse interstellar medium: Mid-IR spectroscopic constraints. *Astrophys. J. Suppl. Ser.* **138**, 75-98.
- Pierson, R. H., Fletcher, A. N., Clair Gantz, E. St. (1956): Catalogue of infrared spectra for qualitative analysis of gases. *Anal. Chem.*, **8**, 1218-1239.
- Pieters, C. M. (1977): Characterization and distribution of lunar mare basalt types using remote sensing techniques. PhD. Thesis, MIT.
- Pieters, C. M. (1983): Strength of mineral absorption features in the transmitted component of near-infrared reflected light: First results from RELAB. *J. Geophys. Res.*, **88**, 9534-9544.
- Pieters, C. M. & Mustard, J. (1988): Exploration of crustal/mantle material for the Earth and Moon using reflectance spectroscopy. *Remote Sens. Envir.*, **24**, 151-178.
- Pieters, C. M. & Englert, P. A. J. (1993): *Remote Geochemical Analysis: Elemental and mineralogical composition*; Cambridge University Press.
- Pilcher, C. B., Chapman, C. R., Lebofsky, L. A. & Kieffer, H. H. (1970): Saturn's rings: Identification of water frost. *Science*, **167**, 1372-1373.
- Pilcher, C. B.; Ridgway, S. T. & McCord, T. B. (1972): Galilean Satellites: Identification of water frost. *Science*, **178**, 1987-1089.
- Pizzarello, S., Hang, Y., Becker, L., Poreda, R., Nieman, R.A., Cooper, G., Williams, M. (2001): The organic content of the Tagish Lake Meteorite. *Science*, **293**, 2236-2239.
- Pollack, J. B.; Witteborn, F. C.; Erickson, E. F.; Strcker, D. W.; Baldwin, B. J.; Bunch, T. E. (1978): Near-Infrared spectra of the Galilean satellites: Observations and compositional implications. *Icarus*, **36**, 271-302.

- Pollack, J. B. & Fanale, F. (1982): Origin and evolution of the Jupiter satellite system. In: *Satellites of Jupiter* (D. Morrison, Ed.); Univ. of Arizona Press, Tucson, 872-910.
- Pollack, J. B., Hubickj, O., Bodenheimer, P., Lissauer, J. J., Podolak, M., Greenzweig, Y. (1996): Formation of the giant planets by concurrent accretion of solid and gas, *Icarus*, **124**, 62-85.
- Poscolieri, M. (1982): Stratigraphic relationships among the upper layers of the outer Galilean satellites, inferred from the investigation of their ray system. In: *Comparative study of the Planets* (A. Coradini & M. Fulchignoni), Dordrecht, Reidel, 485-494.
- Poscolieri, M. & Schultz, P. H. (1980): Crater rays on Ganymede and Callisto. In: *The Satellites of Jupiter*, IAU Coll. 57, Univ. of Hawai, Abstract.
- Prentice, A. J. R. (2001): Origin, bulk chemical composition and physical structure of the Galilean satellites of Jupiter: A post-Galileo analysis. *Earth, Moon and Planets* (Kluwer Academic Publ.), **87**, 11-55.
- Prinn, R. G. & Fegley, B. Jr. (1981): Kinetic inhibition of CO and N₂ reduction in circumplanetary nebulae: Implication for satellite composition. *Astrophys. J.*, **249**, 308-317.
- Prockter, L. M., Head, J. W., Pappalardo, R. T. Senske, D. A., Neukum, G., Wagner, R., Wolf, U., Oberst, J., Giese, B., Moore, J. M., Chapman, C. R., Helfenstein, P., Greeley, R., Breneman, H. H., Belton, M. J. S. (1998): Dark terrain on Ganymede – Geological mapping and interpretation of Galileo Regio at high resolution, *Icarus*, **135**, 317-344.
- Prockter, L. M., Figueredo, P. H., Pappalardo, R. T., Head, J. W. & Collins, G. C. (2000): Geology and mapping of dark terrain formation. *J. Geophys. Res.*, **105**, 22519-22540.
- Purves, N. G. & Pilcher, C. B. (1980): Thermal migration of water on the Galilean satellites, *Icarus*, **43**, 51-55, 1980.
- Rebhan, H. (1990): Richtungsabhängige Reflexionseigenschaften der lunaren Oberfläche. Dissertation, DLR, Institut für Planetenerkundung, 200.
- Regner, P. (1990): Photometrische Untersuchungen zur Bestimmung physikalisch-struktureller Eigenschaften der Marsoberfläche im Gebiet Oxia Palus. *Dissertation*, Institut für Optoelectronic, DLR, Oberpfaffenhofen, 175.
- Richards, J. A. (1994): *Remote Sensing Digital Image Analysis*, Springer-Verlag, Berlin, 340.
- Rivkin, A.S., Howell, E.S., Vilas, F., Lebofsky, L.A. (2002): Hydrated minerals on asteroids - The astronomical record. In: *Asteroids III* (Bottke, W.F., Cellino, A., Paolicchi, P., Binzel, R.P., eds.), Univ. of Arizona Press, 235-253.
- Rogers, J. H. (1995): *The Giant Planet Jupiter*. Cambridge Univ. Press.
- Ross, M. N. & Schubert, G. (1987): Tidal heating in an internal ocean model of Europa, *Nature*, **325**, 133.
- Roush, T. L.; Pollack, J.B.; Witteborn, F. C.; Bregman, J. D. & Simpson, J. P. (1990): Ice and minerals on Callisto: A reassessment of the reflectance spectra. *Icarus*, **86**, 355-382.
- Roush, T. L. & Singer, R. B. (1986): Gaussian analysis of temperature effects on the reflectance spectra of mafic minerals in the 1- μ m region, *J. Geophys. Res.*, **91**, 10301 – 10308.
- Roush, T. L. & Singer, R. B. (1987): Possible temperature variation effects on the interpretation of spatially resolved reflectance observations of asteroid surfaces, *Icarus*, **69**, 571 – 574.
- Rösler, H. J. (1983): *Lehrbuch der Mineralogie*, 3. Auflage, Bergakademie Freiberg, VEB Deutscher Verlag für Grundstoffindustrie, Leipzig, 833 S.
- Sabins, F. F. Jr. (1987): *Remote Sensing Principles and Interpretation*. 2nd ed. Freeman and Company, New York, 449.
- Sack, N. J., Baragiola, R. A. & Johnson, R. E. (1993): Effects of plasma ion bombardement on the reflectance of Io's trailing and leading hemisphere. *Icarus*, **104**, 152-154.
- Salama, F. ; Sandford, S. A.; Allamandola, L. J.; Cruikshank, D. P. & Witteborn, F. C. (1988): Preliminary spectroscopic evidence for the presence of H₂S and H₂O in the surface material of Io (abstract); *Bull. Am. Astron. Soc.*, **20**, 818.

- Salama, F.; Allamandola, L. J.; Witteborn, F. C.; Cruikshank, D. P.; Sandford, S. A. & Bregman, J. D. (1990); *Icarus*, **83**, 66-82.
- Salisbury, J. W., D'Aria, D. M., and Jarosevich, E. (1991a): Midinfrared (2.5-13.5 micrometers) reflectance spectra of powdered stony meteorites. *Icarus*, **92**, 280-297.
- Salisbury, J. W., Walter, L. S., Vergo, N., and D'Aria, D. M., (1991b): Infrared (2.1- 25 micrometers) Spectra of Minerals, Johns Hopkins University Press, 294.
- Salisbury, J. W., Wald, A., and D'Aria, D. M. (1994): Thermal-infrared remote sensing and Kirchhoff's law 1. Laboratory measurements: *J. of Geophys. Res.*, **99**, 11897-11911.
- Sandford, S. A. & Allamandola, L. J. (1988): The condensation and vaporization behavior of H₂O:CO ices and implications for interstellar grains and cometary activity, *Icarus*, **76**, 201-224.
- Sandford, S.A. (1996): The inventory of interstellar materials available for the formation of the solar system. *Meteorit. Planet. Sci.*, **31**, 449-476.
- Samuelson, R. E., Maguire, W. A., Hanel, R. A., Kunde, V. G., Jennings, D. E., Yung, Y. L. & Aikin, A. C. (1983): CO₂ on Titan. *J. Geophys. Res.*, **88**, 8709-8715.
- Schenk, P. M. (1991): Ganymede and Callisto – complex crater formation and planetary crusts. *J. Geophys. Res.*, **96**, 15635.
- Schenk, P. M. (1993): Central pit and dome craters – Exposing the interiors of Ganymede and Callisto. *J. Geophys. Res.*, **98**, 7475-7498.
- Schenk, P. M. (1995): The geology of Callisto. *J. Geophys. Res.*, **100**, 19023-19040.
- Schenk, P. M. (2002): Thickness constraints on the icy shells of the Galilean satellites from a comparison of crater shapes. *Nature*, **417**, 419-421.
- Schenk, P. M. & McKinnon, W.B. (1985): Dark halo craters and the thickness of grooved terrain on Ganymede. *J. Geophys. Res.*, **90**, 775-783.
- Schenk, P. M. & McKinnon, W. B. (1987): Ring geometry on Ganymede and Callisto. *Icarus*, **72**, 209-234.
- Schenk, P. M. & McKinnon, W. B. (1991): Dark-ray and dark-floor craters on Ganymede, and the provenance of large impactors in the Jovian system. *Icarus*, **89**, 318-346.
- Schenk, P. M. & Moore, J. M. (1998): Geologic landforms and processes on icy satellites. In: *Solar System Ices* (B. Schmitt, C. de Bergh, M. Festou, eds.), Kluwer, 551.
- Schenk, P. M. & Ridolfi, F. J. (2002): Morphology and scaling of ejecta deposits on icy satellites. *Geophys. Res. Lett.*, **29**, 31-1.
- Schenk, P. M., Asphaug, E., McKinnon, W. B., Melosh, H. J. & Weissman, P. R. (1996): Cometary nuclei and tidal disruption – The geologic record of crater chains on Callisto and Ganymede. *Icarus*, **121**, 249-274.
- Schenk, P. M., McKinnon, W. B., Gwynn, D. & Moore, J. M. (2001): Flooding of Ganymede's bright terrains by low-viscosity water-ice lavas, *Nature*, **410**, 57-60.
- Schenk, P. M., Chapman, C. R., Zahnle, K. & Morre, J. M. (2004): Ages and Interiors – the Cratering Record of the Galilean Satellites. In: *Jupiter* (F. Bagenal, T. Dowling, W. B. McKinnon, eds.), 719.
- Schmitt, B., Quirico, E., Trotta, F., Grundy, W. M. (1998): Optical properties of ices from UV to infrared. In: *Solar System Ices* (B. Schmitt, C. de Bergh, M. Festou, eds.), Kluwer, 199-240.
- Schröder, R. A., Weir, C. E. & Lippin, E. R. (1962): Lattice frequencies and rotational barriers for inorganic carbonates and nitrates from low temperature infrared spectroscopy. *J. Res. Natl. Bureau Stds*, **66a**, 407-433.
- Schubert, G., Stevenson, D. & Ellsworth, K. (1981): Internal structures of the Galilean satellites. *Icarus*, **47**, 46-59.
- Schubert, G., Spohn, T., Reynolds, R. T. (1986): Thermal histories, compositions and internal structures of the moons of the solar system. In: *Satellites* (J. A. Burns & M. S. Matthews, eds.), Univ. of Arizona Press, Tucson, 224-292.
- Schubert, G., Zhang, K., Kivelson, G. & Anderson (1996): The magnetic field and internal structure of Ganymed. *Nature*, **384**, 544-545.

- Schubert, G., Anderson, J. D., Spohn, T., McKinnon, W. B.* (2004): Interior composition, structure and dynamics of the Galilean satellites. In: *Jupiter* (F. Bagenal, T. Dowling, W. B. McKinnon, eds.), Cambridge Univ. Press, 281-306.
- Segatz, M., Spohn, T., Ross, M. N. & Schubert, G.* (1988): Tidal dissipation, surface heat flow, and figure of viscoelastic models of Io. *Icarus*, **75**, 187-206.
- Shoemaker, E. M. & Wolfe, R. F.* (1982): Cratering time scales for the Galilean satellites. In: *Satellites of Jupiter* (D. Morrison, Ed.), Univ of Arizona Press, Tucson, 277-339.
- Shoemaker, E. M., Lucchitta, B. K., Wilhelms, D. E., Plescia, J. B. & Squyres, S. W.* (1982): The geology of Ganymede. In: *Satellites of Jupiter* (D. Morrison, Ed.), Univ. of Arizona Press, Tucson, 435-520.
- Showman, A. P. & Malhotra, R.* (1997): Tidal evolution into the Laplace resonance and the resurfacing of Ganymede. *Icarus*, **127**, 93-111.
- Showman, A. P., Stevenson, D. J. & Malhotra, R.* (1997): Coupled orbital and thermal evolution of Ganymede. *Icarus*, **129**, 367-383.
- Smythe, W. D., Nelson, R. M. & Nash, D. B.* (1979): Spectral evidence for SO₂ frost or adsorbate on Io's surface, *Nature*, **280**, 766.
- Sill, G. & Clark, R. N.* (1982): Composition of the surfaces of the Galilean icy satellites. In: *Satellites of Jupiter*, (D. Morrison, Ed.), Univ. of Arizona, Tucson, 174-212.
- Simonelli, D. P. & Veverka, J.* (1986): Phase curves of material on Io: Interpretation in terms of Hapke's function. *Icarus*, **68**, 503-521.
- Singer, R. B.* (1981): Near-infrared reflectance of mineral mixtures: Systematic combinations of pyroxenes, olivine, and iron oxides. *J. Geophys. Res.*, **86**, 7967-7982.
- Singer, R. B. & Blake, P. L.* (1983): Effects of mineral grain size and physical particle size on spectral reflectance of basalts. *Lunar and Planetary Science*, **XIV**, Lunar and Planet. Inst., Houston, 706-707.
- Singer, R. B. & Roush, T. L.* (1985): Effects of temperature on remotely sensed mineral absorptions features. *J. Geophys. Res.*, **90**, 12434-12444.
- Smythe, W. D.; Nelson, R. M. & Nash, D. B.* (1979): Spectral evidence for SO₂ frost or adsorbate on Io's surface; *Nature*, 280, 766.
- Smith, B. A., Briggs, G. A., Danielson, G. E., Cook, A. F. II., Davies, M. E., Hunt, G. E., Masursky, H., Soderbloom, L. A., Owen, T. C., Sagan, C., Suomi, V. E.* (1977) Voyager Imaging Experiment. *Space Sci. Rev.*, **21**, 103-127.
- Smith, B. A., Soderbloom, L. A., Johnson, T. V., Ingersoll, A. P., Collins, S. A., Shoemaker, E. M., M. E., Hunt, Masursky, H., Carr, M., Davies, G. E., Cook, A. F., Boyce, J., Owen, T., Danielson, G. E., Sagan, C., Beebe, R., Veverka, J., McCauley, J. F., Strom, R. G., Morrison, D., Briggs, G., & Suomi, V. E. &* (1979 a): The Jupiter system through the eyes of Voyager 1, *Science*, **204**, 951-957.
- Smith, B. A., Soderbloom, L. A., Beebe, R., Boyce, J., Briggs, G., Carr, M., Collins, S. A., Cook, A. F., Danielson, G. E., Davies, M. E., Hunt, G. E., Ingersoll, A. P., Johnson, T. V., Masursky, H., McCauley, J. F., Morrison, D., Owen, T., Sagan, C., Shoemaker, E. M., Strom, R. G., Suomi, V. E. & Veverka, J.* (1979 b): The Galilean satellites of Jupiter: Voyager 2 imaging science results, *Science*, **206**, 927-950.
- Smith, M. O. & Adams, J. B.* (1985): Interpretation of AIS images of Cuprite, Nevada using constraints of spectral mixtures. In: *Proceedings, AIS Workshop*, 8-10 April, 1985, 62-67, JPL Publ.85-41.
- Smith, M. O., Johnson, P. E., Adams, J. B.* (1985): Quantitative Determination of Mineral Types and Abundances from Reflectance spectra using Principle Component Analysis. *Proc. Lunar. Plant. Sci. Conf.* **15th**, C797-C804.
- Snyder, J. P. & Voxland, P. M.* (1989): An album of map projections. U.S. Geological Survey Prof. Paper 1453.
- Spencer, J. R.* (1987 a): The surfaces of Europa, Ganymed, and Callisto. An investigation using Voyager IRIS Thermal Infrared Spectra. *PhD Thesis*, Univ. of Arizona.
- Spencer, J. R.* (1987 b): Thermal segregation of water ice on the Galilean satellites. *Icarus*, **69**, 297-313.

- Spencer, J. R. & Maloney, P. R. (1984): Mobility of water-ice on Callisto: evidence and implications, *Geophys. Res. Lett.*, **11**, 1223-1226.
- Spencer, J. R., Calvin, W. M., Person, M. J. (1995): Charge-coupled device spectra of the Galilean satellites: Molecular oxygen on Ganymede. *J. Geophys. Res. Planets*, **100**, 19049-19056.
- Squyres, S. W. (1980 a): Volume changes in Ganymede and Callisto and the origin of grooved terrain. *Geophys. Res. Lett.*, **7**, 593-596.
- Squyres, S. W. (1980 b): Surface temperatures and retention of H₂O frost on Ganymede and Callisto. *Icarus*, **44**, 502.
- Squyres, S. W. (1981): The topography of Ganymede's grooved terrain. *Icarus*, **46**, 156-168.
- Squyres, S. W. & Veverka, J. (1981): Voyager photometry of surface features on Ganymede and Callisto, *Icarus*, **46**, 137-155.
- Squyres, S. W., Reynolds, R. T. & Cassen, P. M. (1983a): Liquid water and active resurfacing on Europa, *Nature*, **301**, 225.
- Stahl, K. & Miosga, G. (1986): *Infrarottechnik*. Dr. Alfred Hüthig Verlag Heidelberg, 214.
- Starukhina, L. V., Shkuratov, Yu. G. (1995): A model for ion bombardment-induced organic synthesis on carbon-bearing surfaces in cosmic space. *Icarus*, **113**, 442-449.
- Stephan, K., Jaumann, R., Hibbitts, C.A., Hansen, G.B., McCord, T.B. (2002): Spectral variations on the surface of Jupiter's moon Ganymede. *EGS General Assembly*, Nice, France, 21 - 26 April 2002, European Geophysical Society.
- Stephan, K., Jaumann, R., Hibbitts, C.A., Hansen, G.B., McCord, T.B. (2002): Spectral analysis of Jupiter's satellite Ganymede. EUROCONFERENCE Jupiter after Galileo and Cassini, Lisbon - Portugal, June 17 - 21, 2002, European Space Agency.
- Stephan, K., Jaumann, R., Hibbitts, C.A., Hansen, G.B. (2003): Ganymede craters: relationships between spectral properties and crater retention age. *34th Lunar and Planetary Science Conference*, Abstract, 1687.
- Stephan, K., Jaumann, R., Hibbitts, C. A., Hansen, G. B. (2003): Band position variations in reflectance spectra of the Jovian satellite Ganymede. *Lunar and Planet. Sci.*, Abstract, 1738.
- Stephan, K., Jaumann, R., Wagner, R., Hibbitts, C.A., Hansen, G.B. (2003): Ganymede craters: compositional modifications as a function of time. *EGS-AGU-EUG Joint Assembly*, Nice, France, 06 - 11 April 2003.
- Stephan, K., Jaumann, R., Hibbitts, C.A., Hansen, G. B. (2004): Band position variations in reflectance spectra of the Jovian satellite Ganymede. *35th Lunar and Planetary Science Conference*, Abstract, 1738.
- Stephan, K., Jaumann, R., Hibbitts, C.A., Hansen, G. B. (2004): Band position variations in reflectance spectra of the Jovian satellite Ganymede. *European Geoscience Union 1st General Assembly*, Nice, France, 25-30 April 2004.
- Stephan, K., Jaumann, R., Hibbitts, C.A., Hansen, G.B. (2005): Relationships between depths of water ice absorption bands - indicator of changes in particle size of water ice on the surface of Ganymede. *Lunar and Planetary Science Conference*, Abstract, 2061.
- Stevenson, D. J. (1982 b): Formation of the giant planets. *Planet. Space Sci.*, **30**, 359-362.
- Stevenson, D. L., Harris, A. W., Lunine, J. I. (1986): Origins of satellites. In: *Satellites* (J. A. Burns & M. S. Matthews, eds.); Univ. of Arizona Press; Tucson; 39-88.
- Stone, E. C. & Lane, A. L. (1979a): Voyager 1 encounter with the Jovian system; *Science*, **204**, 945-948.
- Stone, E. C. & Lane, A. L. (1979b): Voyager 2 encounter with the Jovian system; *Science*, **206**, 925-927.
- Strazulla, G., Baratta, G. A., Leto, G. & Foti, G. (1992): Ion beam induced amorphization of crystalline water ice. *Europhys. Lett.*, **18**, 517-522.
- Sung, C., Singer, R. B., Parkin, K. M. & Burns, R. G. (1977): Temperature dependence of Fe²⁺ crystal field spectra: Implications to mineralogical mapping of planetary surface. *Proc. Lunar Sci. Conf.* 8th, 1063-1079.
- Swayze, G. A., and Clark, R. N. (1995): Spectral identification of minerals using imaging spectrometry data: evaluating the effects of signal to noise and spectral resolution using the Tricorder Algorithm. In: *Summaries of the Fifth Annual JPL Airborne Earth Science Workshop*, JPL Publication 95-1, 157-158.

- Tholen, D. J. (1984): Asteroid taxonomy from cluster analysis of photometry. Ph.D. dissertation, Uni. Of Arizona, Tucson, 150.
- Thomas, P. J., Veverka, J. & Dermott, S. (1986): Small satellites; In: *Satellites* (Burns, J. A. & Matthews, M.S., eds), Univ. of Arizona, Tucson, 802-835.
- Thomas, P. J. & Squyres, S. W. (1990): Formation of crater palimpsests on Ganymede. *J. Geophys. Res.*, **95**, 19161-19174.
- Thomas, P., Veverka, J., Bell, J., Lunine, J. & Cruikshank, D. (1992): Satellites of Mars- Geologic history, In: *Mars* (H. H. Kieffer, B. M. Jakosky, C. W. Snyder, and M. S. Matthews, eds.), Univ. of Arizona, Tucson, 1257–1282.
- Thorpe, T. E. (1973): Mariner-9 photometric observations of Mars from November 1971 through March 1972. *Icarus*, **20**, 482-489.
- Tou, J. T. & R. C. Gonzalez, 1974. *Pattern Recognition Principles*, Addison-Wesley Publishing Company, Reading, Massachusetts.
- Rebhan, H. (1992): Untersuchung der richtungsabhängigen Lichtreflexion an der lunaren Oberfläche. Dissertation der Fakultät für Geowissenschaften der Ludwig-Maximilians-Universität München.
- Urquart, M. L. & Jakosky, B. M. (1996): Constraints on the solid-state greenhouse on the icy Galilean satellites; *J. Geophys. Res.*, **101**, 21,169.
- Überla, K. (1968): *Faktorenanalyse*. Springer Verlag, Berlin, Heidelberg, New York.
- Vane, G. (1985): High spectral resolution remote sensing of the Earth. *Sensors*, **2**, 11-20.
- Vane, G. & Goetz, A. F. H. (1988): Terrestrial imaging spectroscopy. *Remote Sens. Environ.*, **24**, 1-29.
- Vane, G., Goetz, A. F. H. & Wellman, J. B. (1984): Airborne Imaging Spectrometer. A new tool for remote sensing. *IEEE Trans. Geosci. Remote Sens.*, **GE-22**(6), 546-549.
- Veverka, J. (1977): Photometry of satellite surfaces; In: *Planetary Satellites* (Burns, J. A., ed.), Univ. of Arizona, 171-209.
- Veverka, J. & Burns, J. (1980): The moons of Mars. *Ann. Rev. Earth Planet. Sci.*, **8**, 527-558.
- Veverka, J., Thomas, P., Johnson, T. V., Matson, D. & Housen, K. (1986): The physical characteristics of satellite surfaces. In: *Satellites of Jupiter* (D. Morrison, M. S. Matthews, eds.), Univ. of Arizona Press, Tucson, 342-402.
- Verbiscer, A. & Helfenstein, P. (1998): Reflectance spectroscopy of icy surfaces. In: *Solar System Ices* (Schmitt, B., De Bergh, C., & Festou, M., eds.); Astrophysics and Space Science Library, *Vol. 227*, 157-198.
- Vidal, R. A., Bahr, D., Baragiola, R. A., Peters, M. (1997): Oxygen on Ganymede: Laboratory Studies. *Science*, **276**, 1839-1842.
- Warren, S. G. (1982): Optical properties of snow. *Rev. Geophys. Space Phys.* **20**, 67-89.
- Warren, S. G. & Wiscombe, W. J. (1980): A model for the spectral albedo of snow. II. Snow containing atmospheric aerosols. *J. Atmos. Sci.*, **37**, 2734-2745.
- Wendlandt, W.W. & Hecht, H. G. (1966): *Reflectance Spectroscopy*. John Wiley and Sons, 46-90.
- Wheatley, P. J. (1968): *The determination of molecular structure*. Dover, New York, 264. S.
- Williams, D. J., Mauk, B. H., McEntire, R. W. (1998): Properties of Ganymede's magnetosphere as revealed by energetic particle observations. *J. Geophys. Res.*, **103**, 17523-17534.
- Wilkening, L. L. (1978): Carbonaceous chondritic material in the solar system. *Naturwissenschaften*, **65**, 73-79.
- Wilson, E. B. Jr., Decius, J. C. & Cross, P. C. (1955): *Molecular vibrations*, Dover, New York, 388 S.
- Wiscombe, W. J. (1980): Improved Mie scattering algorithmus. *Appl. Opt.*, **19**, 1505-1509.
- Wiscombe, W. J. & Warren, S. G. (1980): A model for the spectral albedo of snow. I. Pure snow. *J. Atmos. Sci.*, **37**, 2712-2733.
- Yeates, C. M.; Johnson, T. V.; Colin, L.; Fanale, F. P.; Frank, L. & Hunten, D. M. (1985): *Galileo – Exploration of the Jupiter System*, NASA SP-479, National Aeronautics and Space Administration, Washington, D.C.
- Zahnle, K., Schenk, P., Levison, H. & Dones, L. (2003): Cratering rates in the outer solar system. *Icarus*, **163**, 263-289.

- Zeidler E.* (2003): *Taschenbuch der Mathematik*, Stuttgart, Leipzig, Wiesbaden.
- Zellner, B.* (1979): In: *Asteroids* (Gehrels, ed.), Univ. of Arizona Press, Tucson, 783-806.
- Zimmer, C., Khurana, K. K. & Kivelson, M. G.* (2000): Subsurface oceans on Europa and Callisto: Constraints from Galileo magnetometer observations, *Icarus*, **147**, 329-347.
- Zimmermann, H. & Weigert, A.* (1999): *Lexikon der Astronomie*. Spektrum Akadem. Verl., Heidelberg, Berlin, 536.
- Zolensky, M. E., Nakamura, K., Gounelle, M., Mikouchi, T., Kasama, T., Tachikawa, O., Tonui, E.* (2002): Mineralogy of Tagish Lake: An ungrouped type 2 carbonaceous chondrite. *Meteoritics & Planet. Sci.* **37**, 737-761.
- Zolotov, M. Yu. & Shock, E.L.* (2001) Stability of Condensed Hydrocarbons in the Solar Nebula. *Icarus*, **150**, 323-337.
- Zuber, M. T. & Parmentier, E. M.* (1984 a): A geometric analysis of surface deformation: Implications for the tectonic evolution of Ganymede, *Icarus*, **60**, 200-210.
- Zuber, M. T. & Parmentier, E. M.* (1984 b): Lithospheric stresses due to radiogenic heating of an ice-silicate planetary body: Implications for Ganymede's tectonic evolution, Proc. Lunar Planet. Sci. Conf. 14 in *J. Geophys. Res. Suppl.*, **89**, B429-B437.