Appendices for
Historical Evaluation of the Film Badge Dosimetry Program at the Y-12 Facility in Oak Ridge, Tennessee
Part 1 – Gamma Radiation

J.P. Watkins[1], G.D. Kerr[2], E.L. Frome[3], W.G. Tankersley[1], and C.M. West[+]

ORAU Technical Report # 2004-0888

Appendix A: Histogram of Quarterly Doses, 1952-79

Appendix B: Quantile-quantile Plots of Quarterly Doses, 1952-79

Appendix C: Memos and Resume of C. M. West

[1] Center for Epidemiologic Research, Oak Ridge Associated Universities

[2] Kerr Consulting Company

[3] Computer Science and Mathematics Division, Oak Ridge National Laboratory

[+] Deceased

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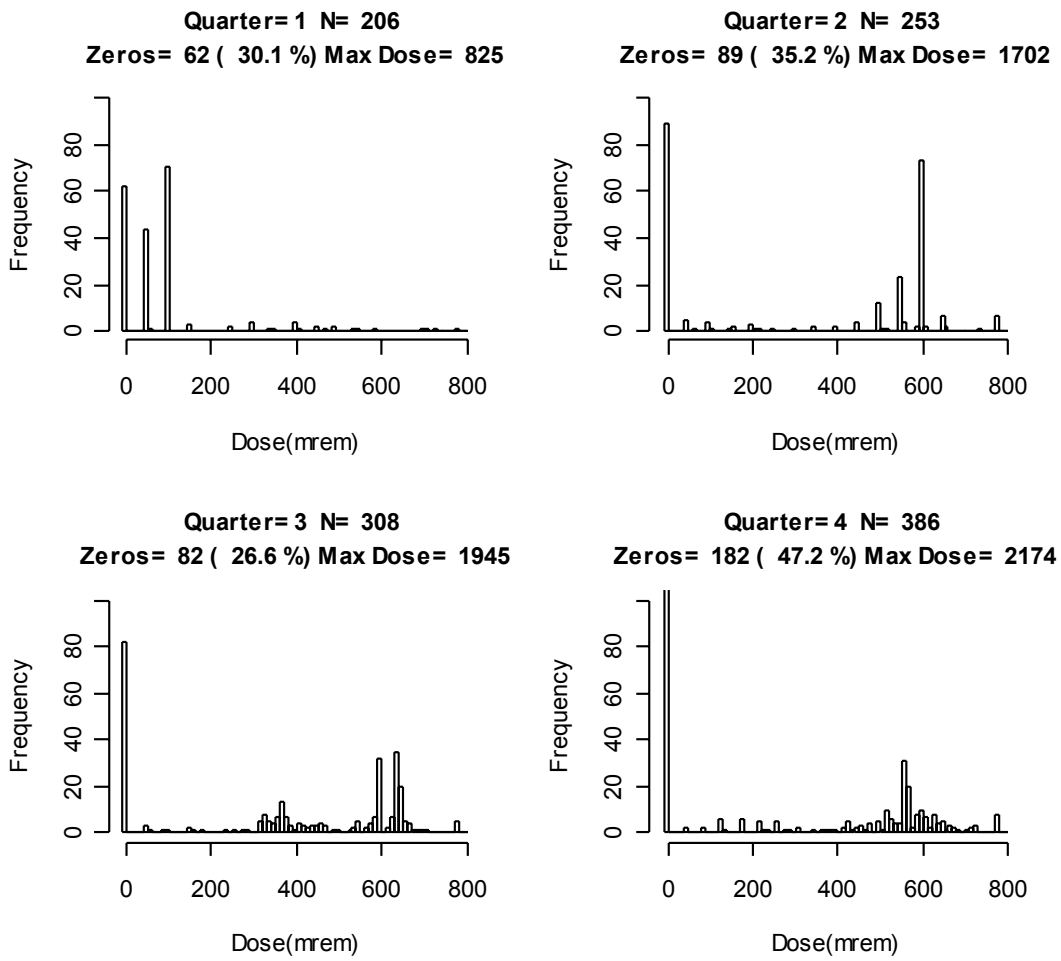
Historical Evaluation of the Film Badge Dosimetry Program at the Y-12 Facility in Oak Ridge, Tennessee, Part 1 – Gamma Radiation

Appendix A: Distributions of Quarterly Gamma Doses by Year

Note change in vertical scale, frequency or number of workers having dose of a given range. Vertical axis ranges 0 - 100 for 1952-60 and 0 - 4000 for 1961-79 corresponding to policy change in 1961 to monitoring all Y-12 workers for external radiation.

Quarterly Y-12 Film Badge Gamma Dose for 1952



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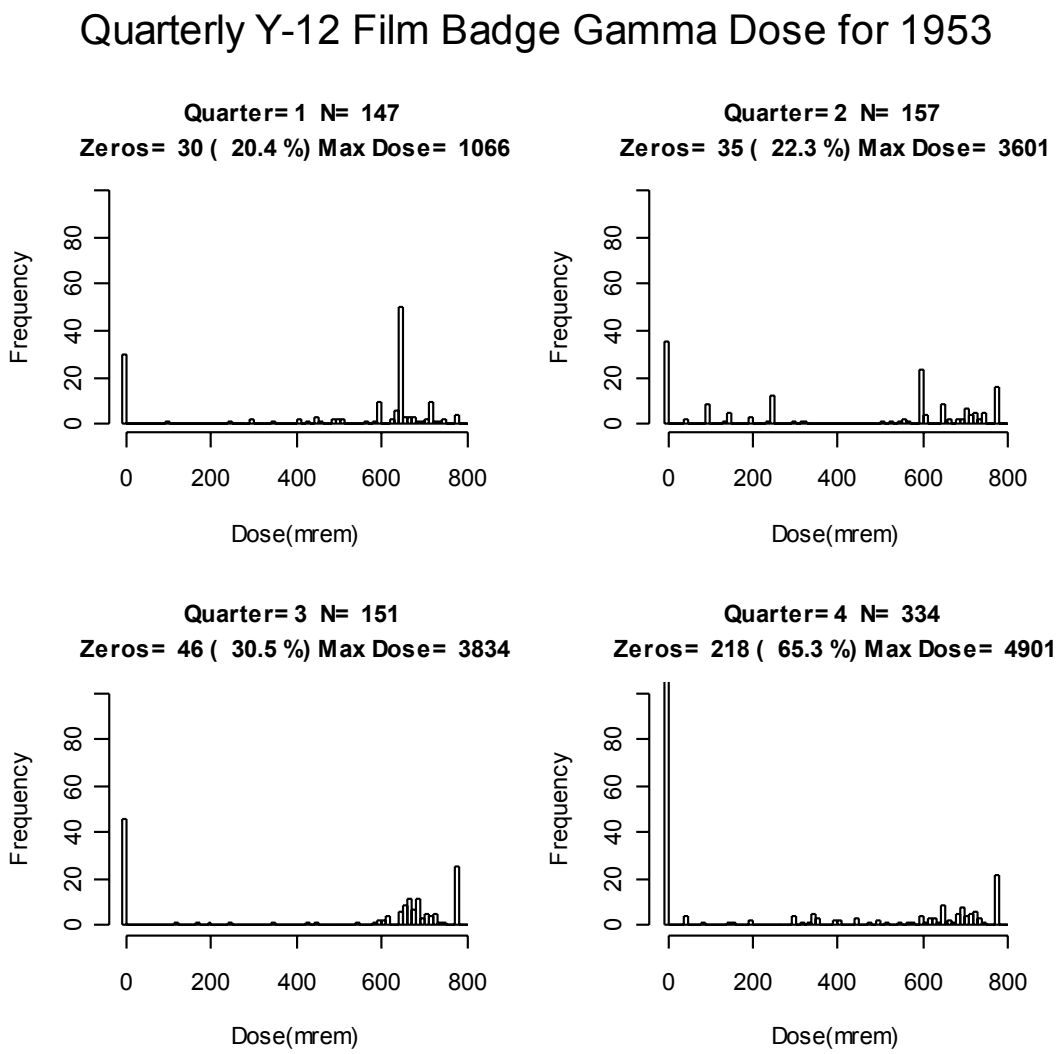

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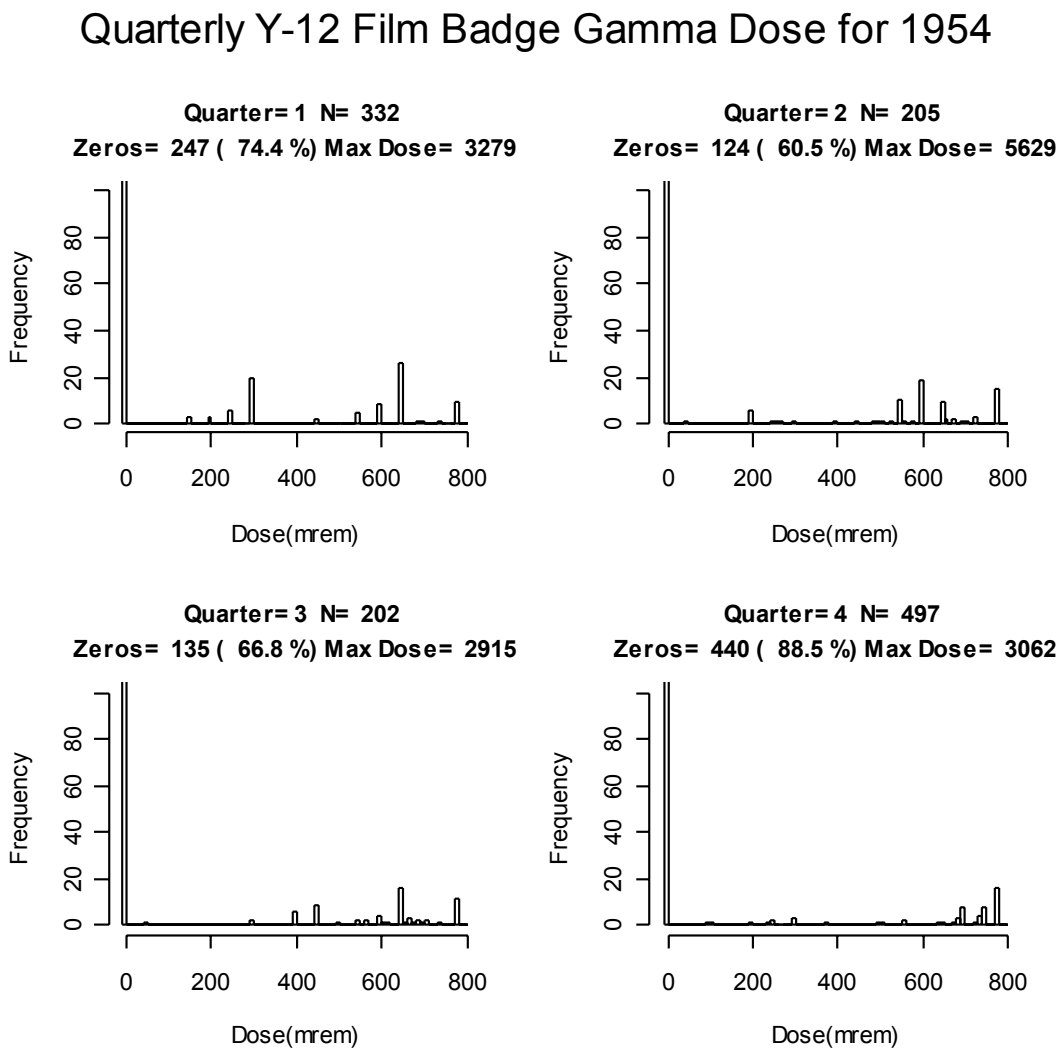

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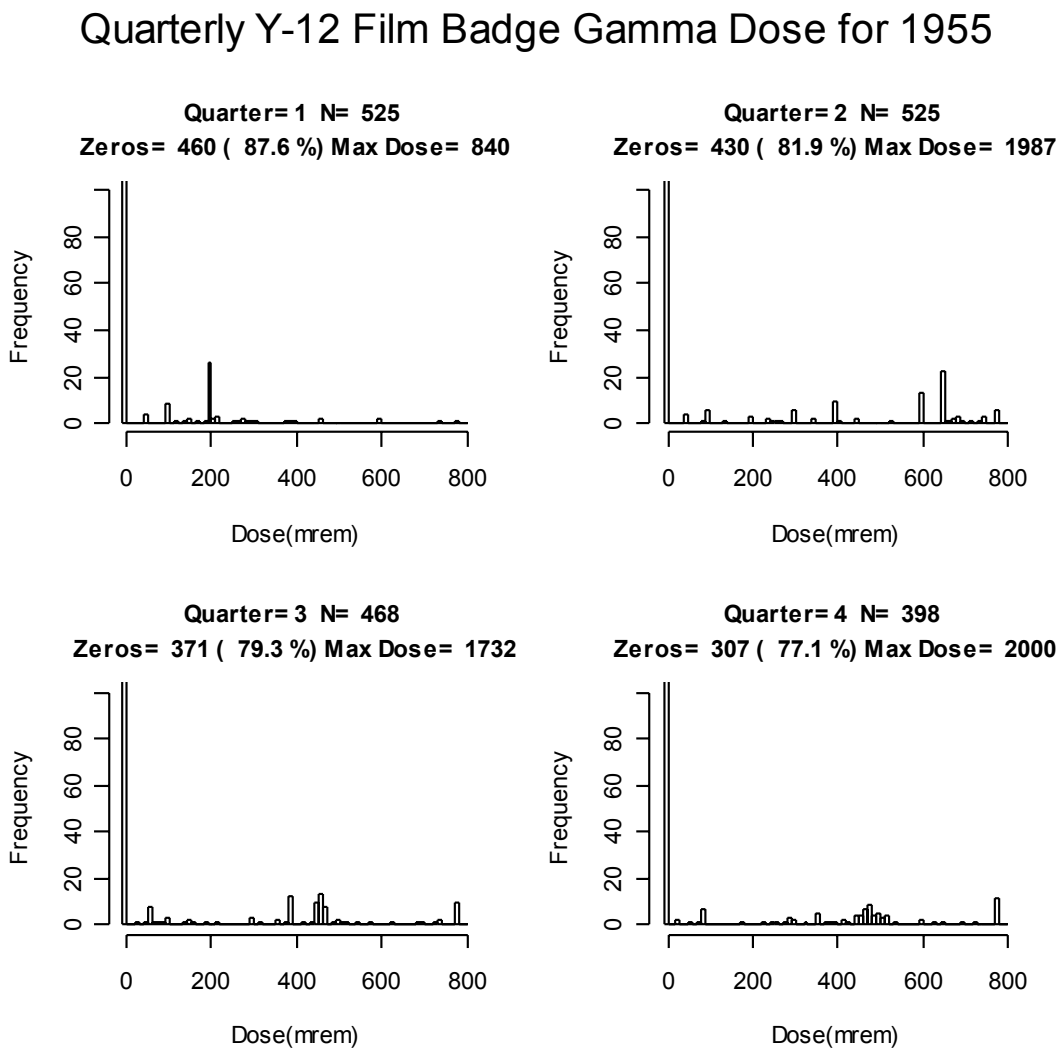

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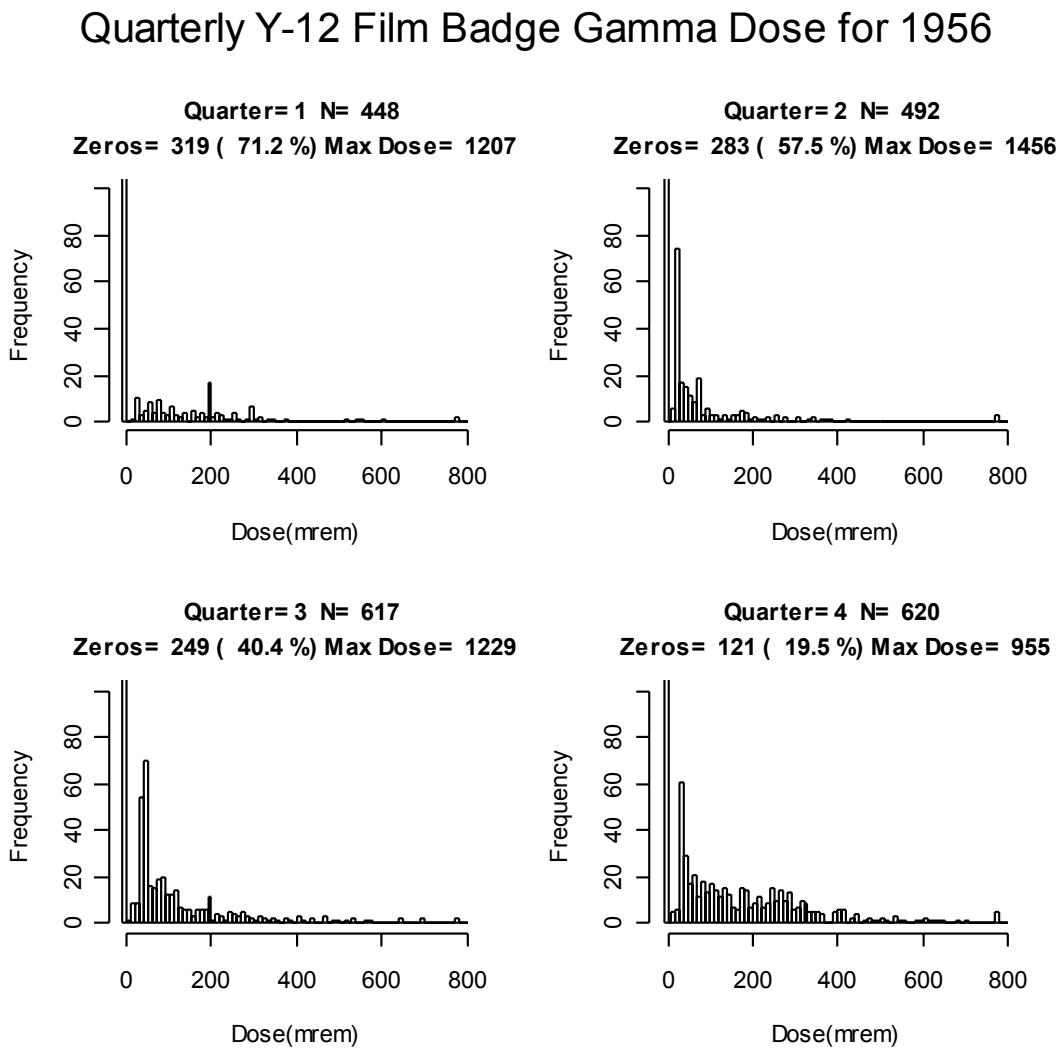

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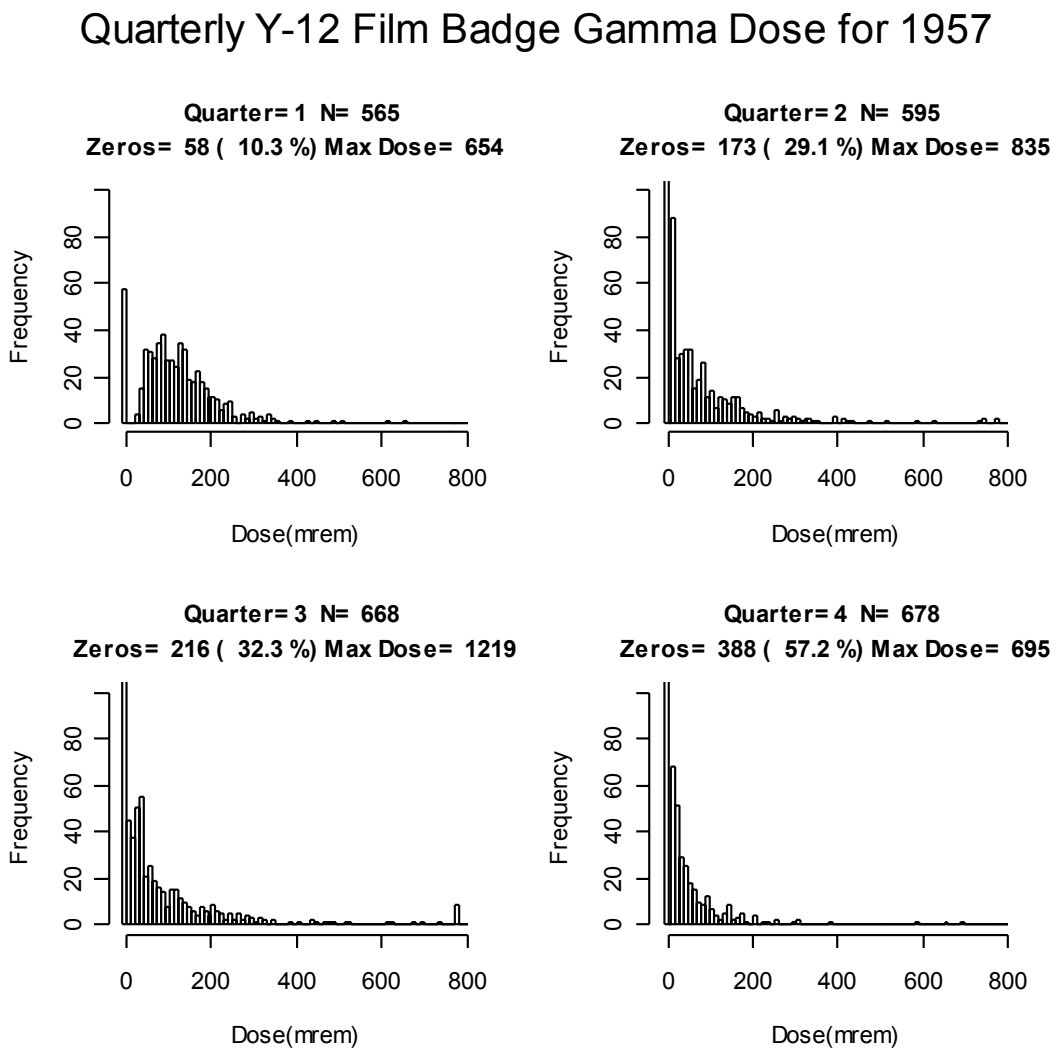

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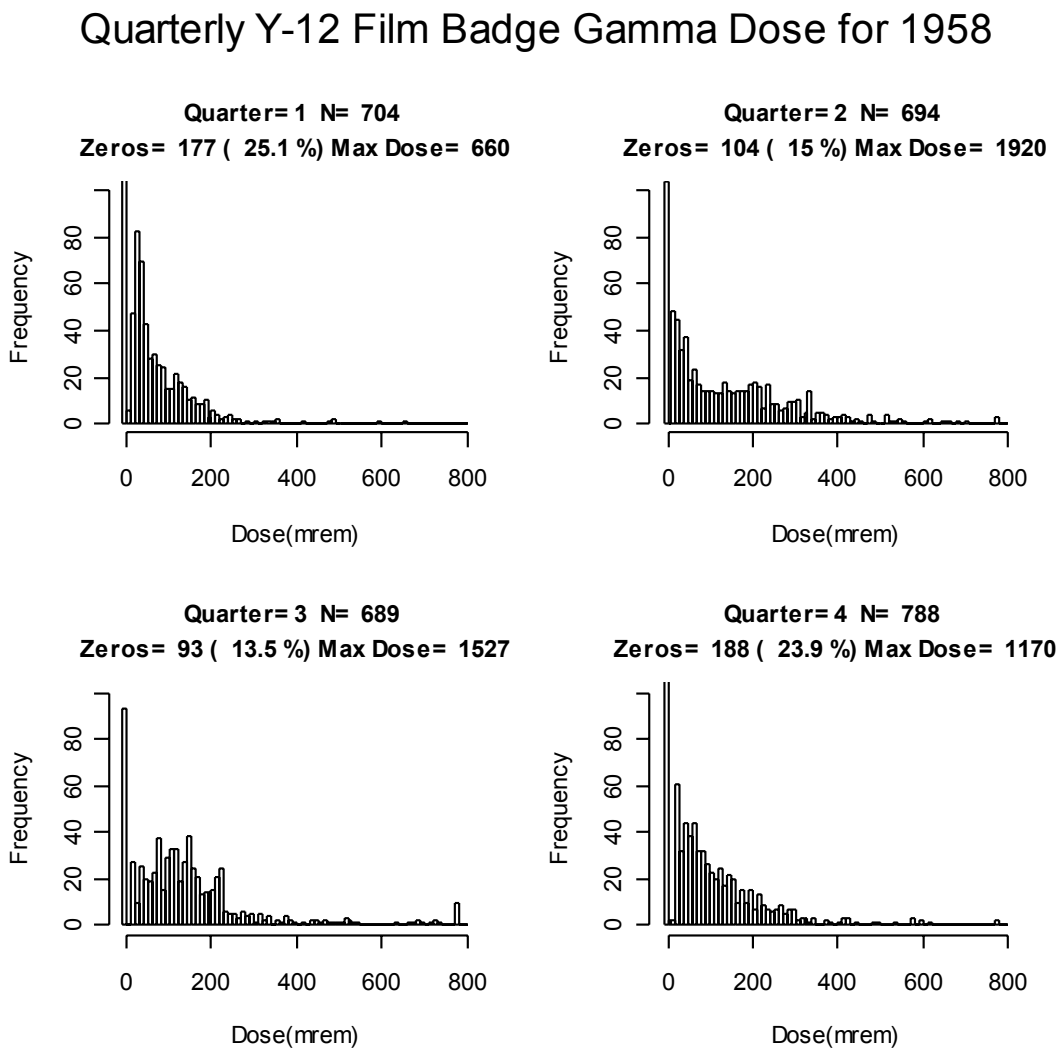

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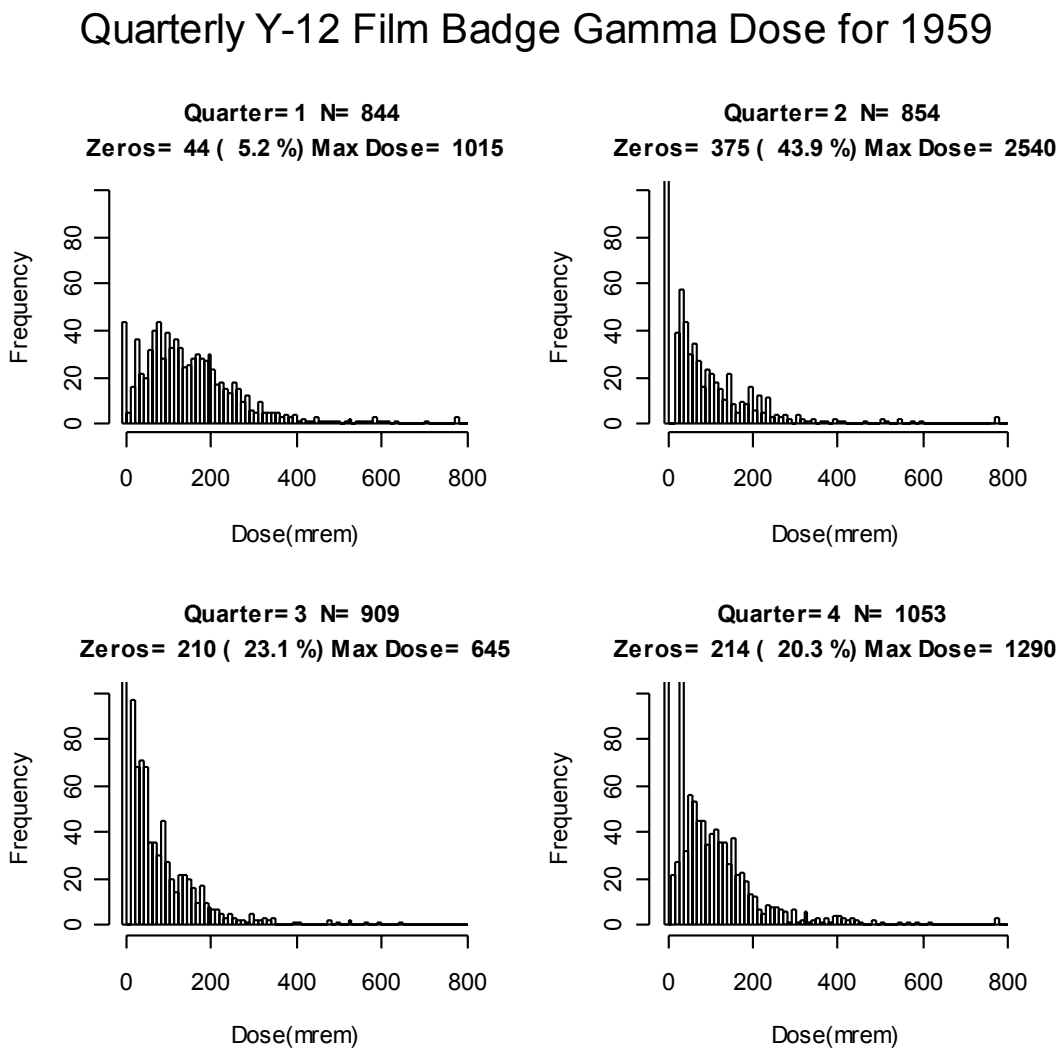

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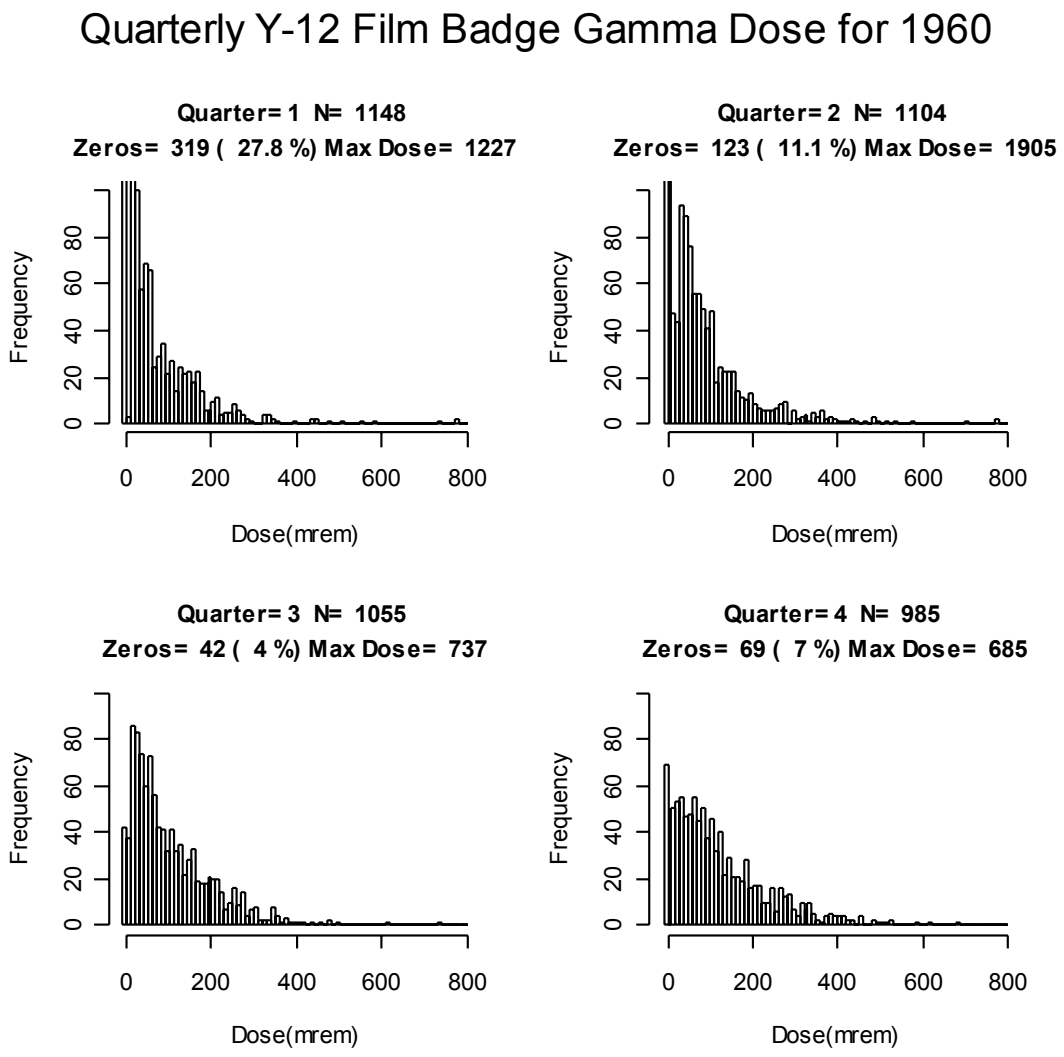

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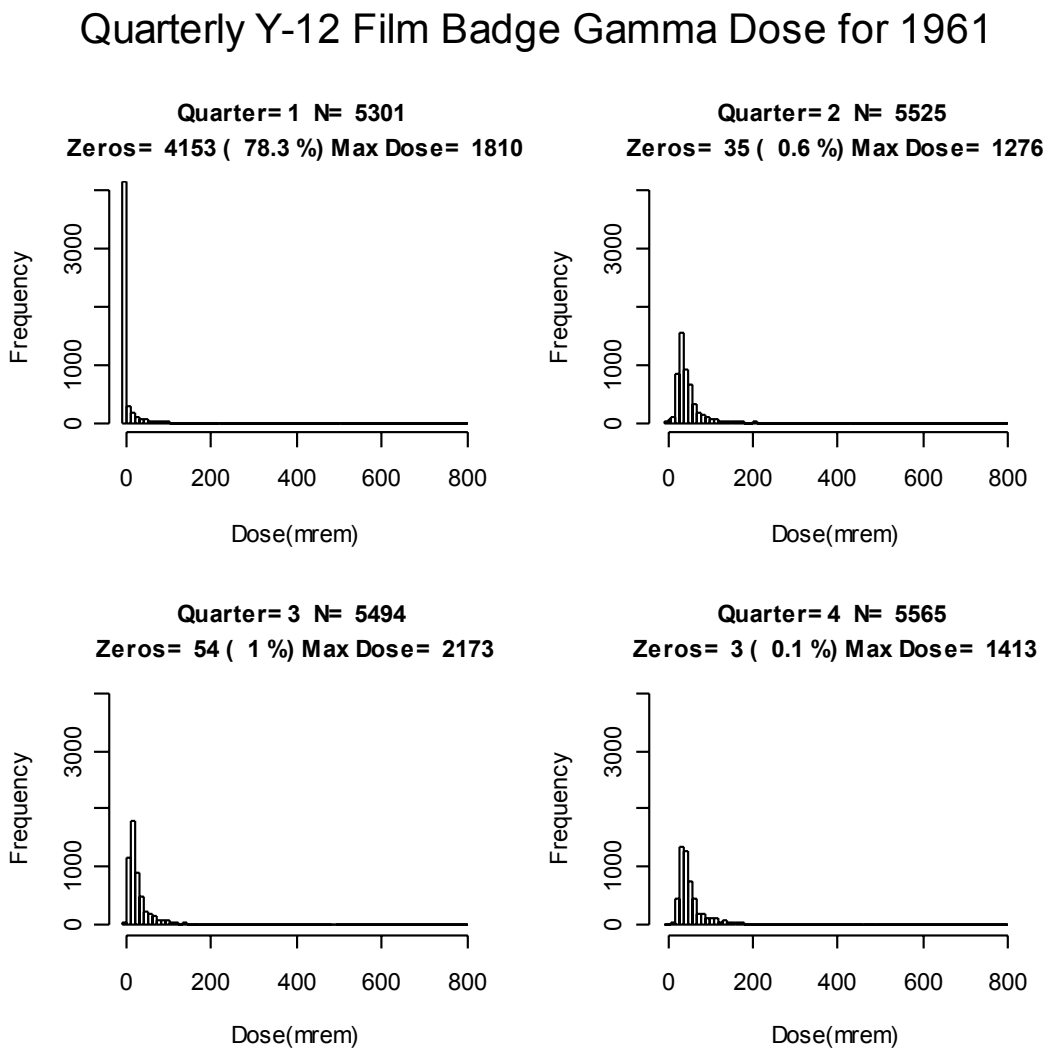

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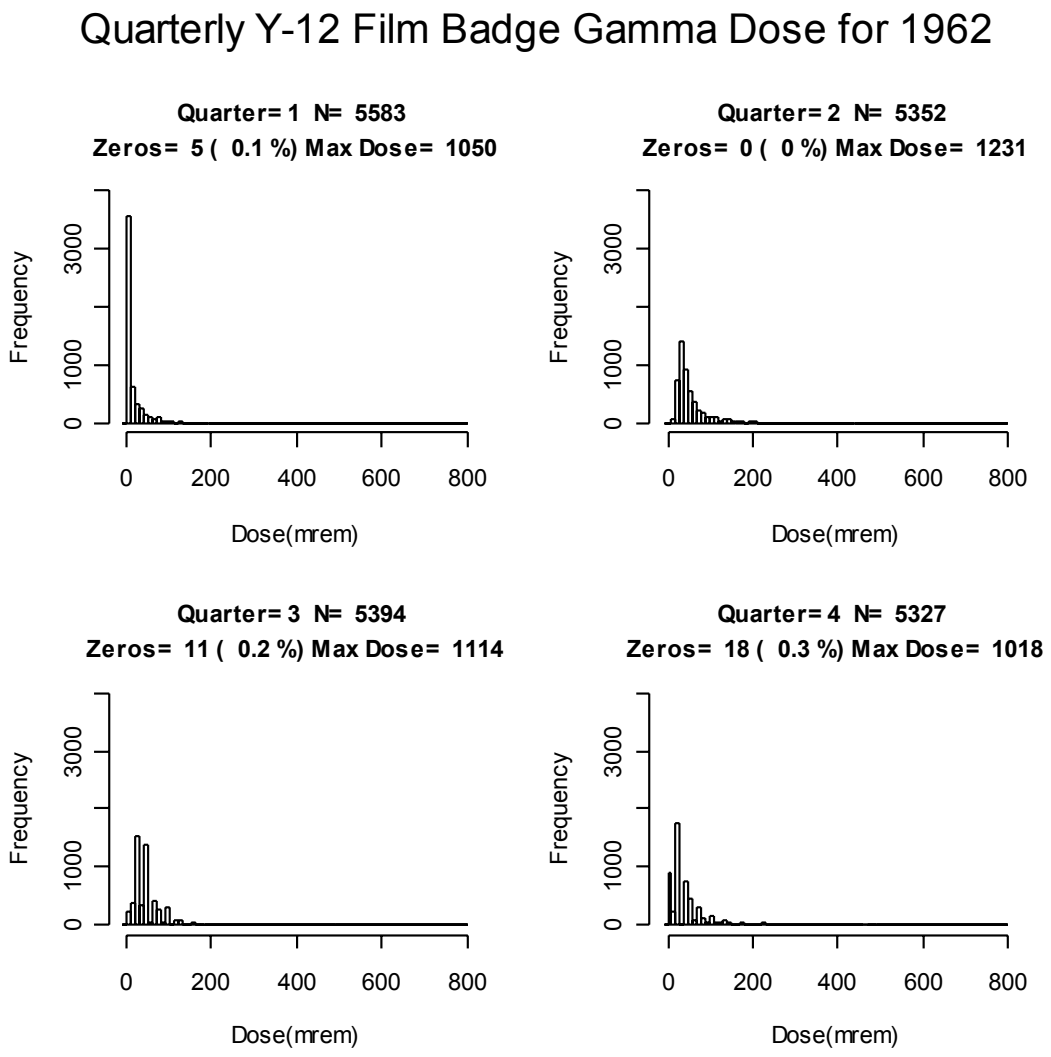

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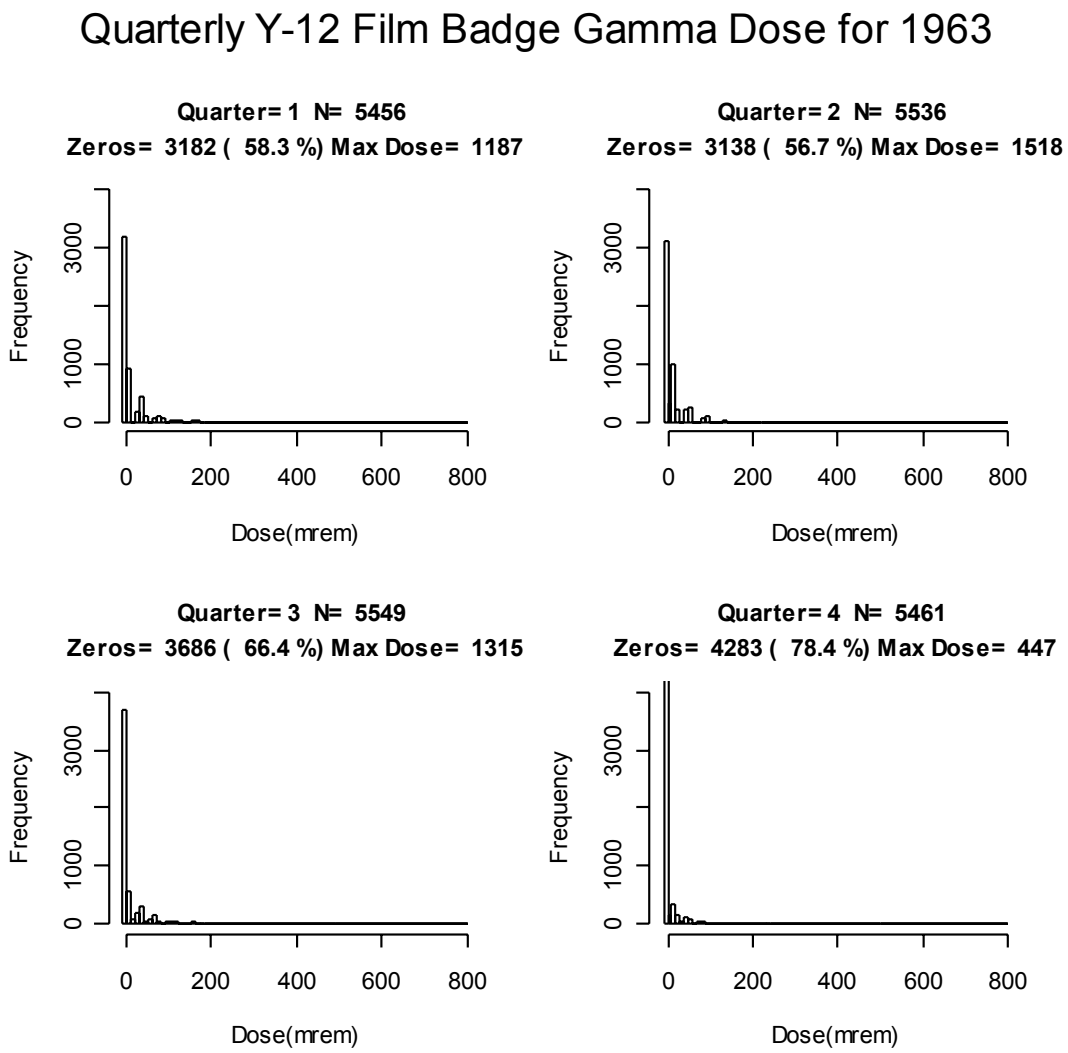

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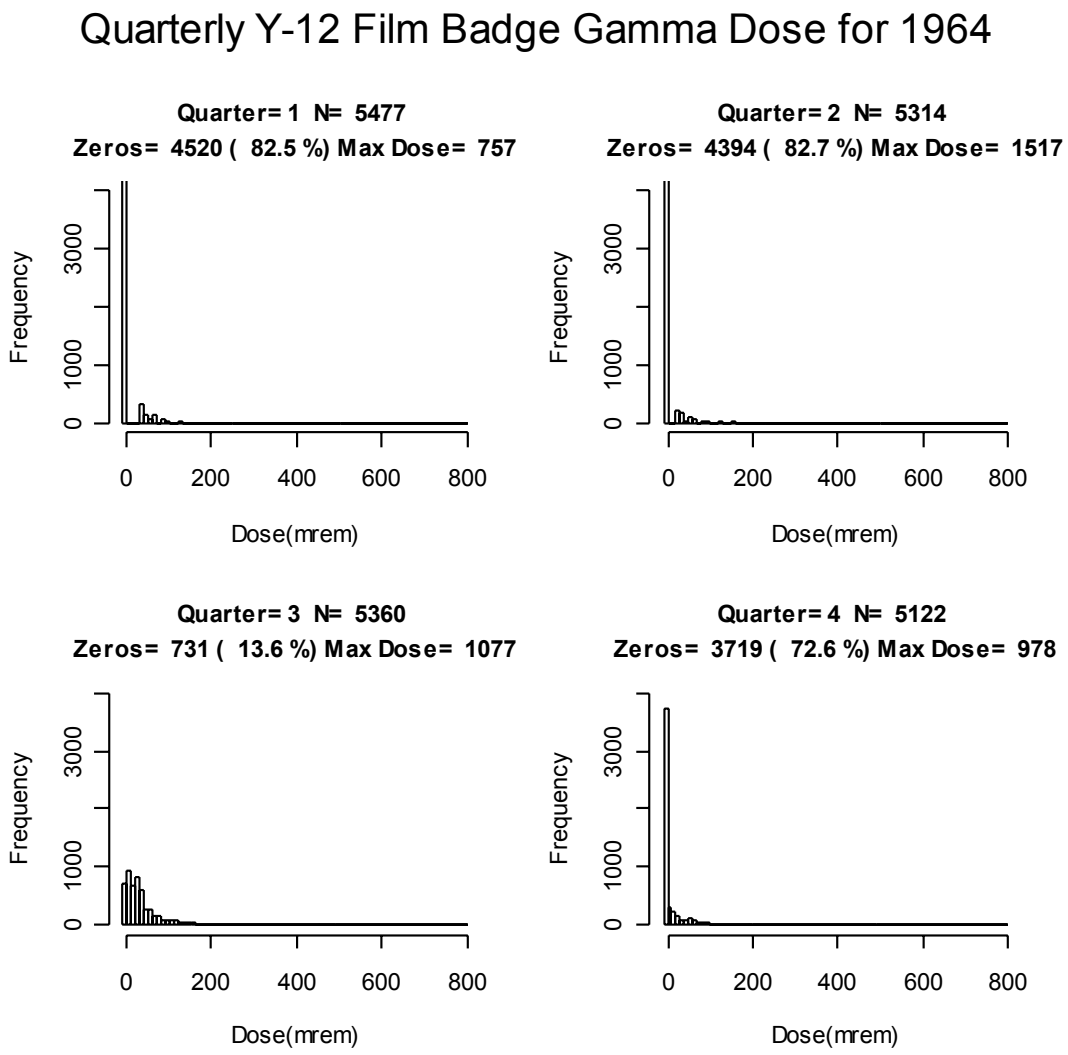

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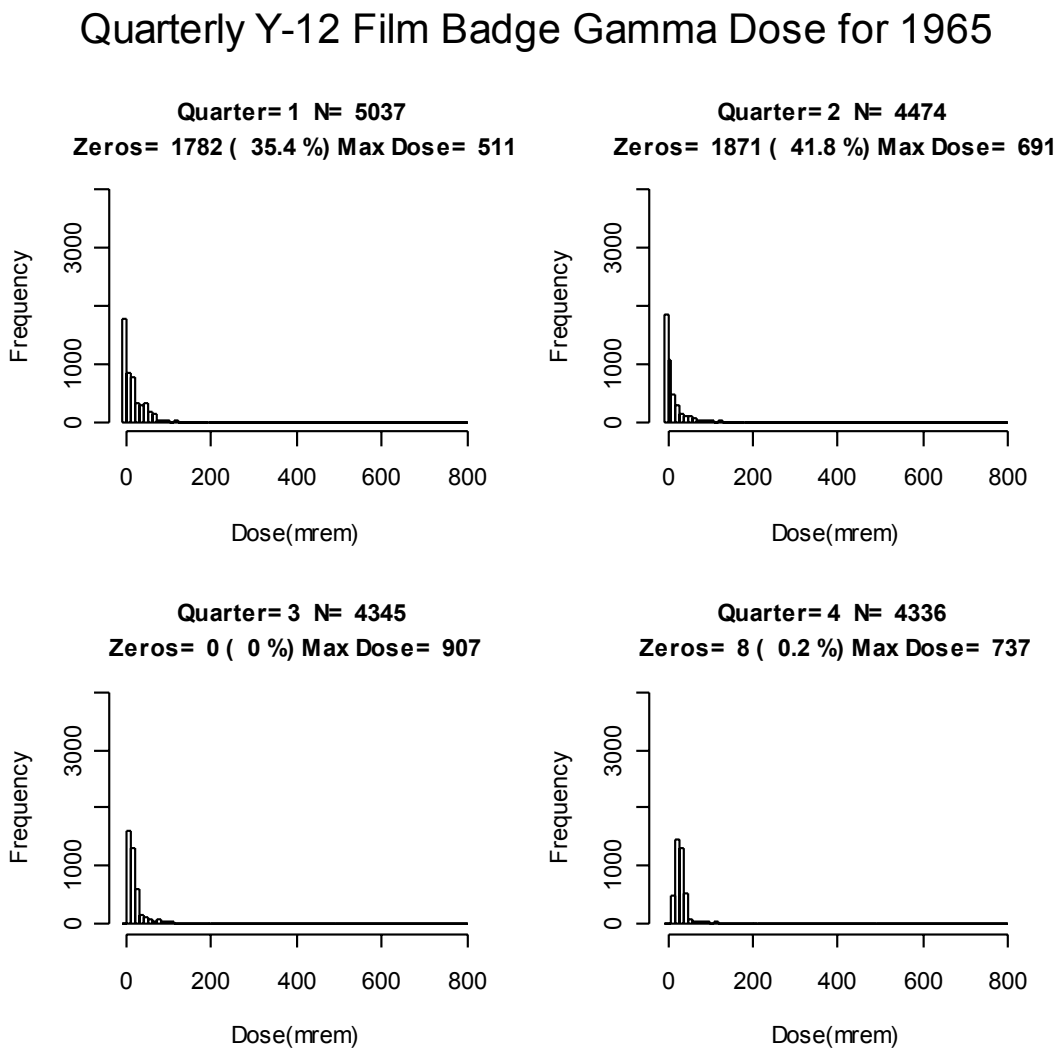

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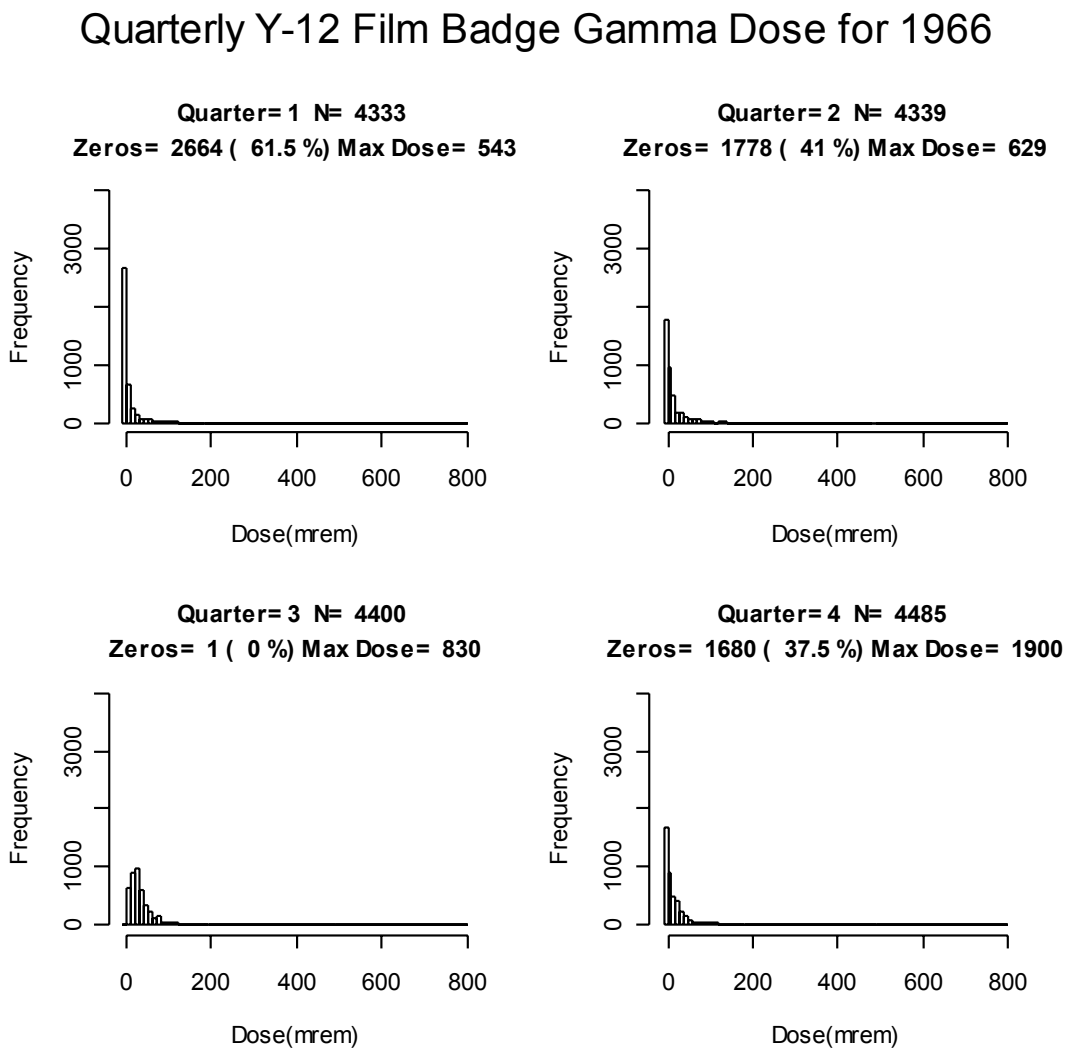

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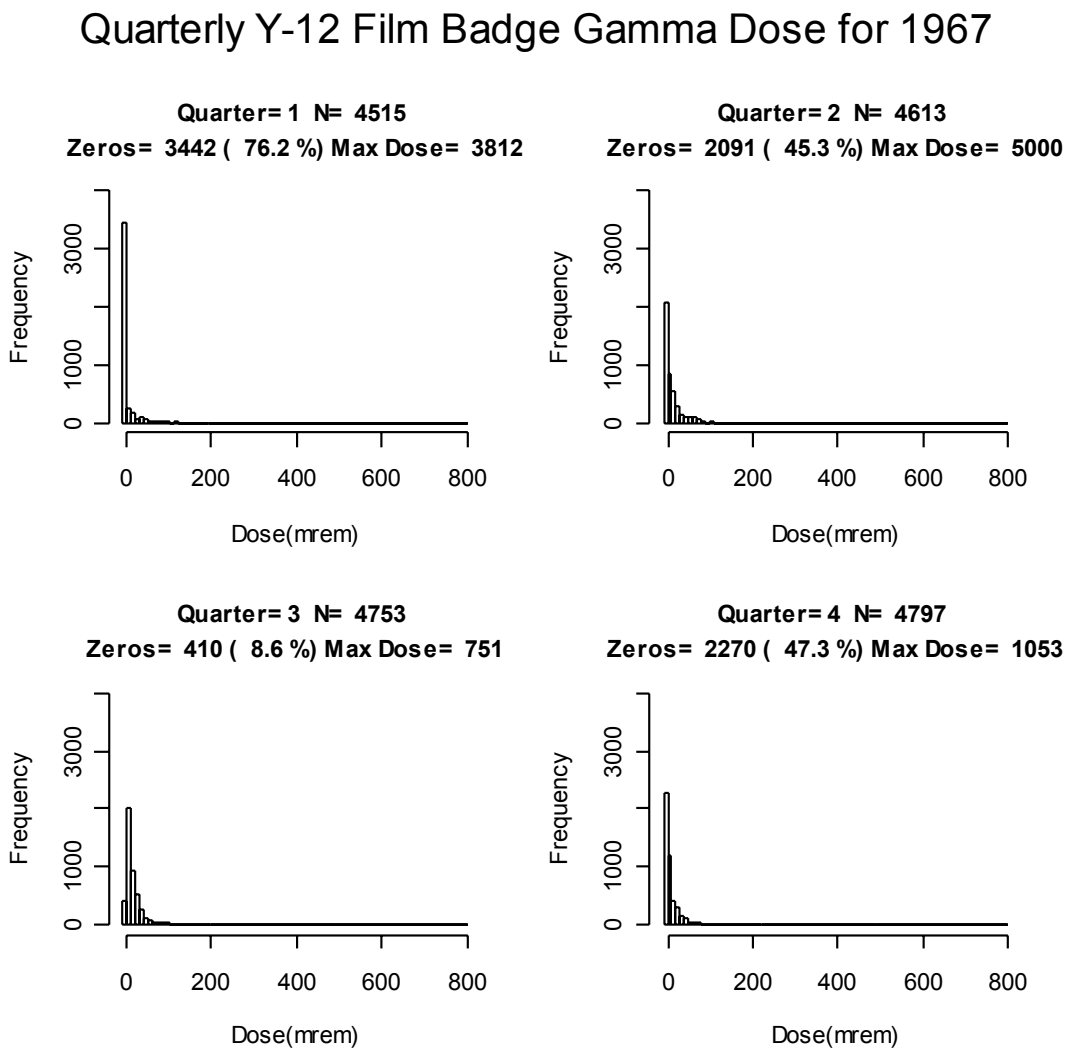

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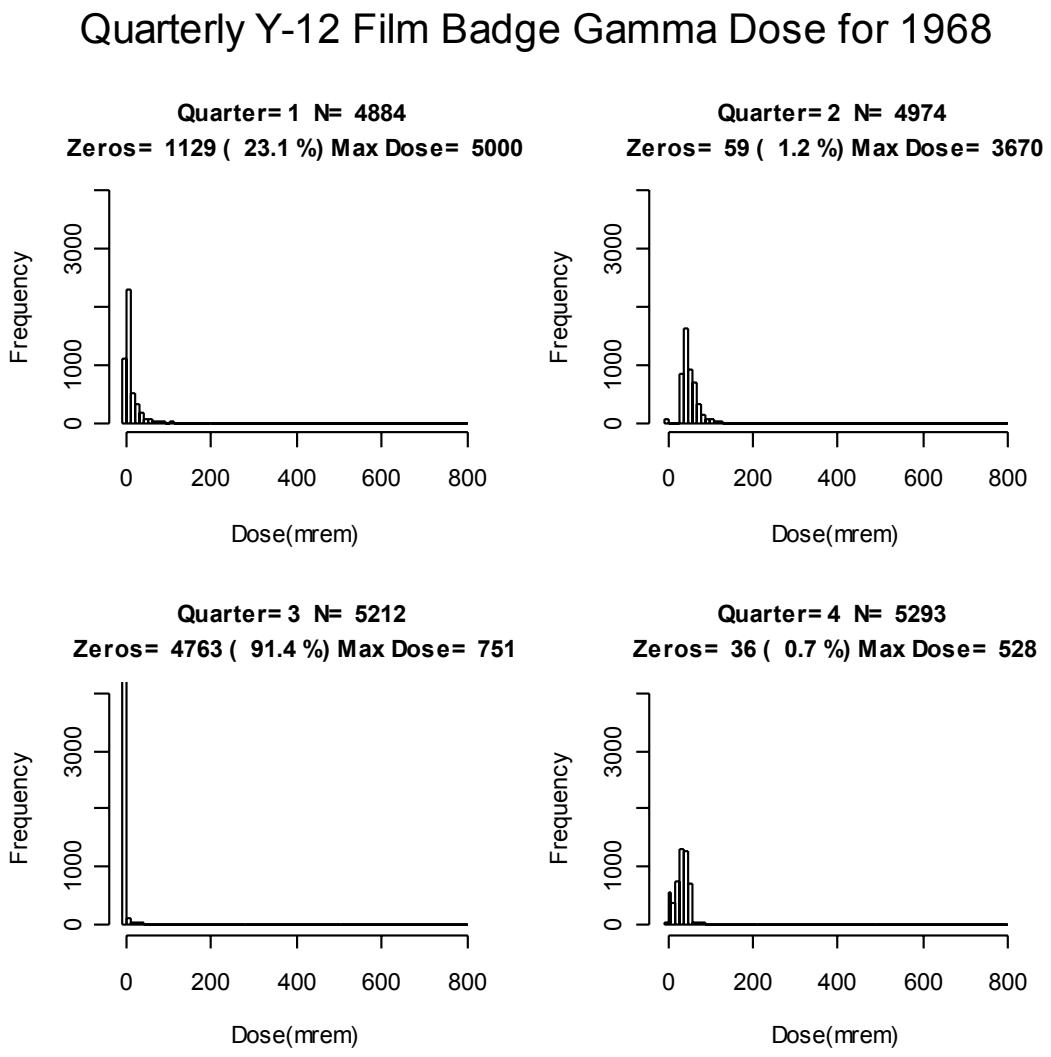

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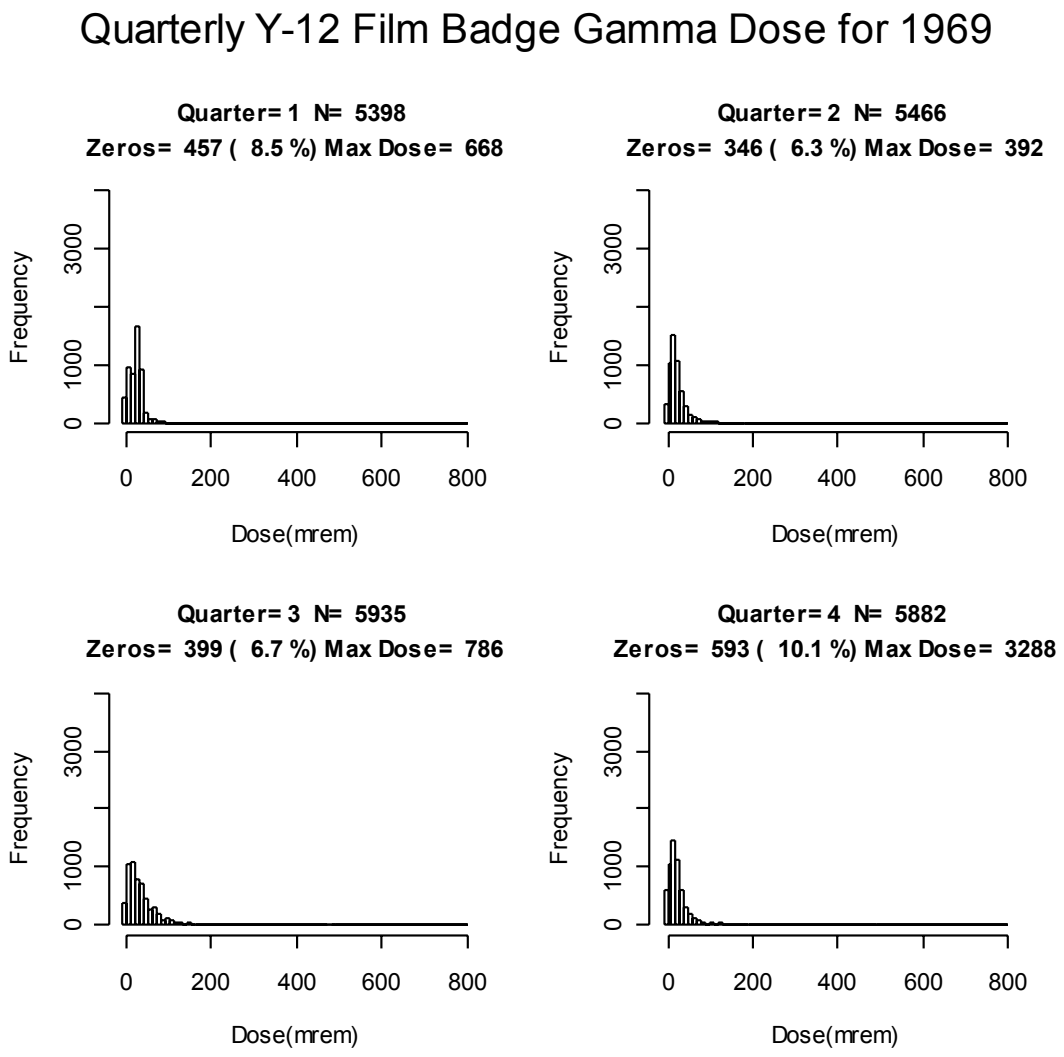

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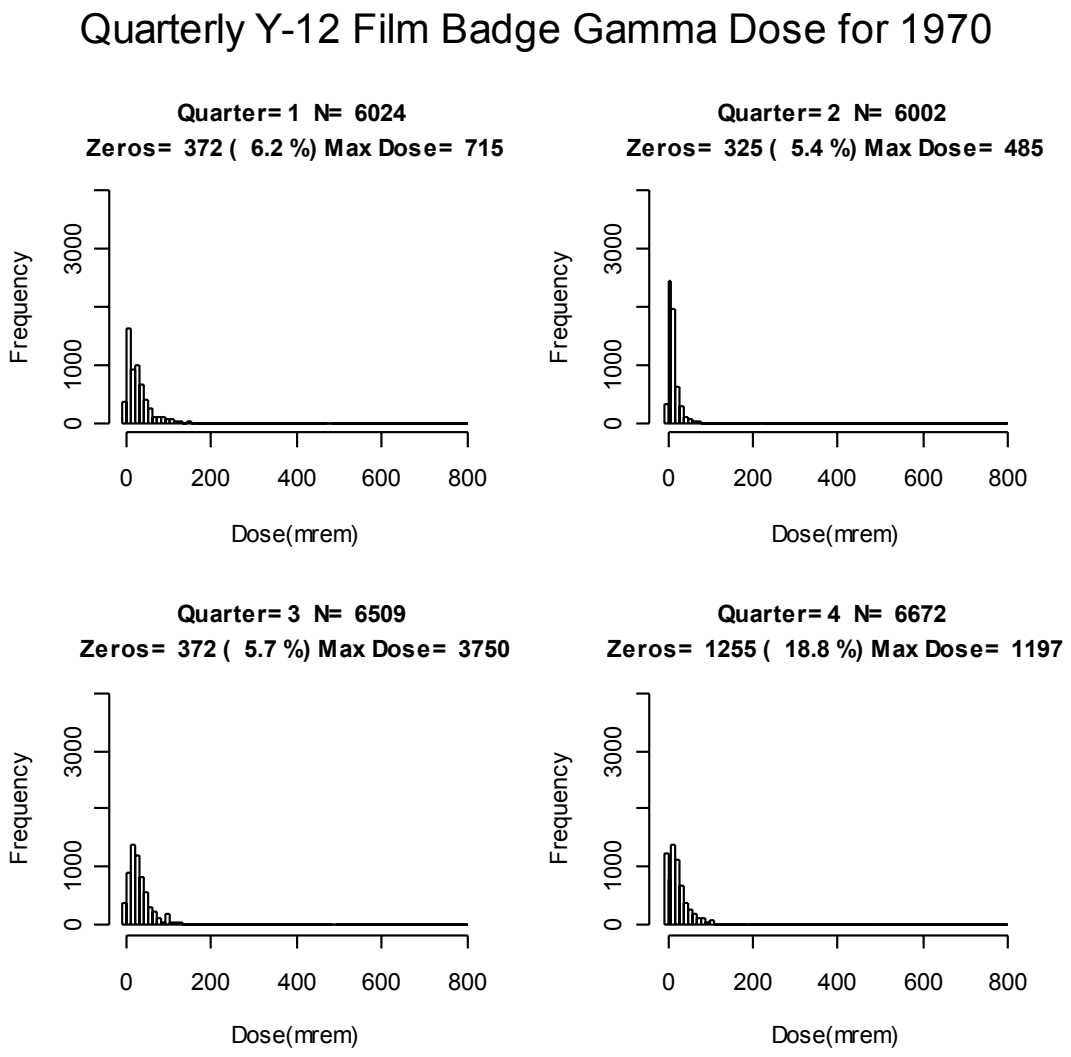

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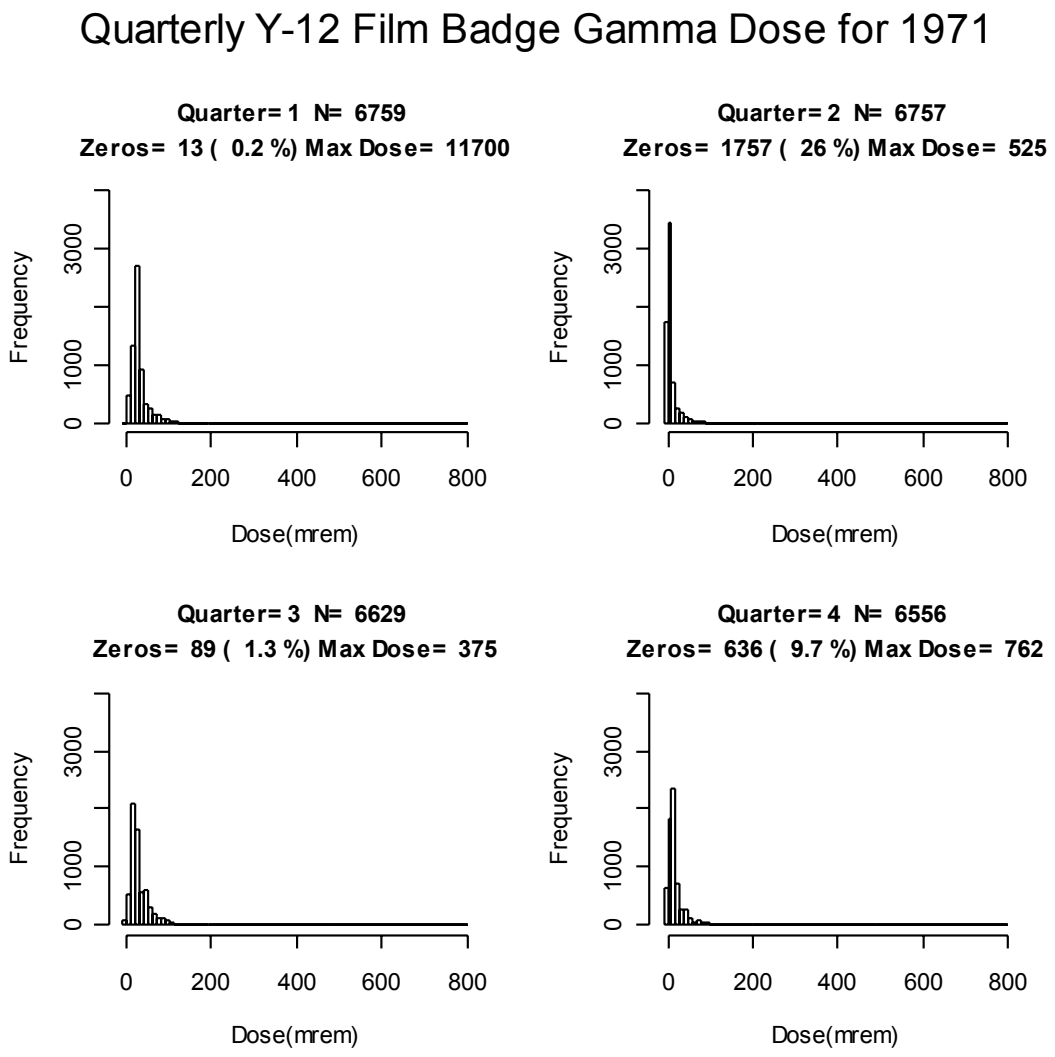

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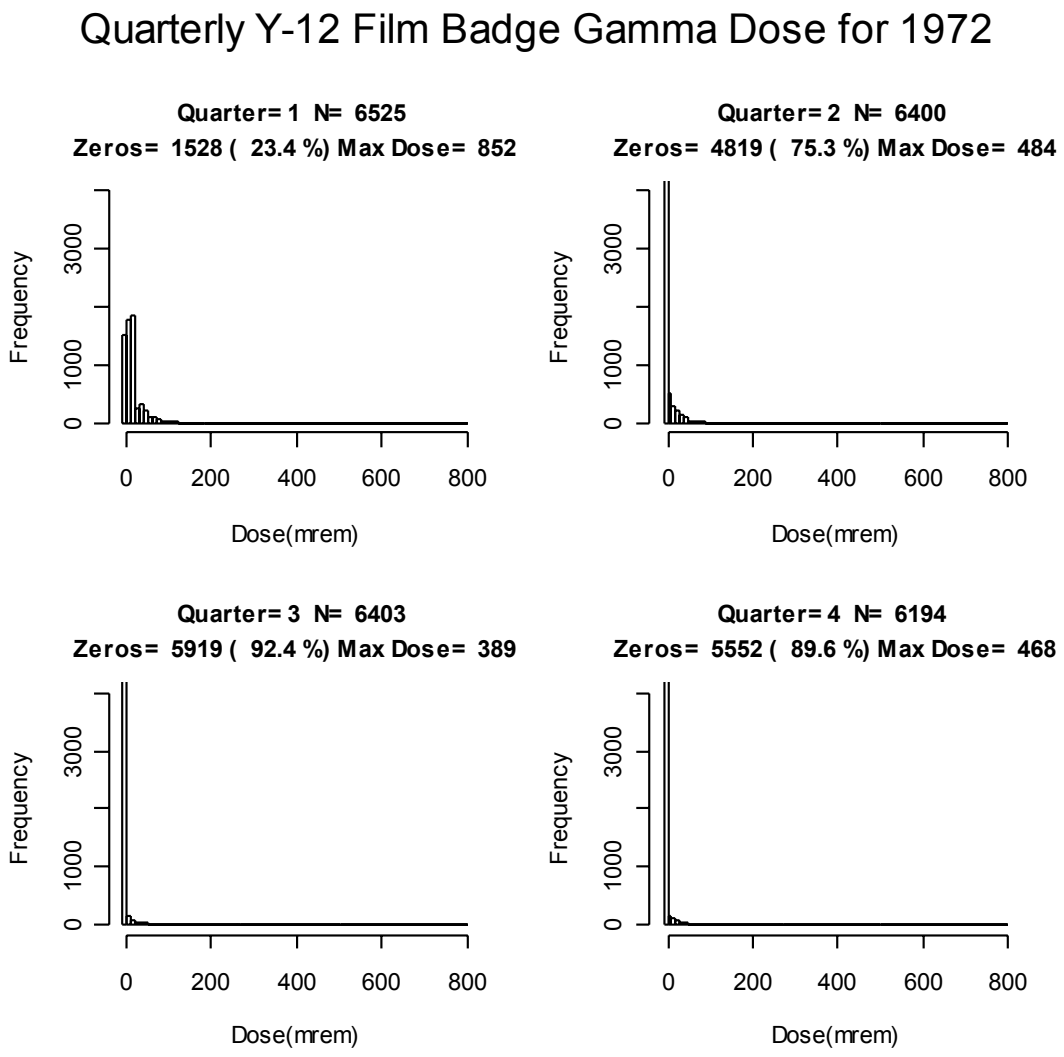

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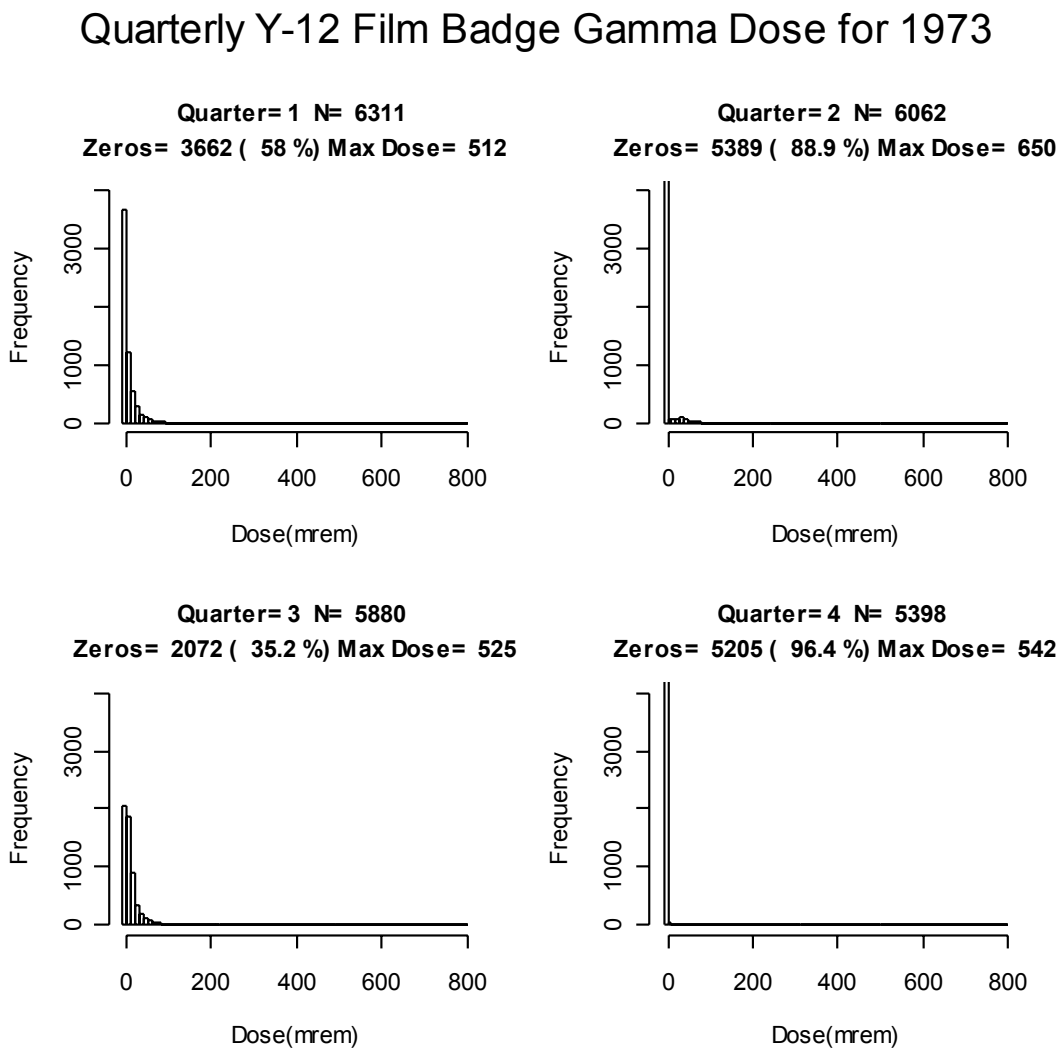

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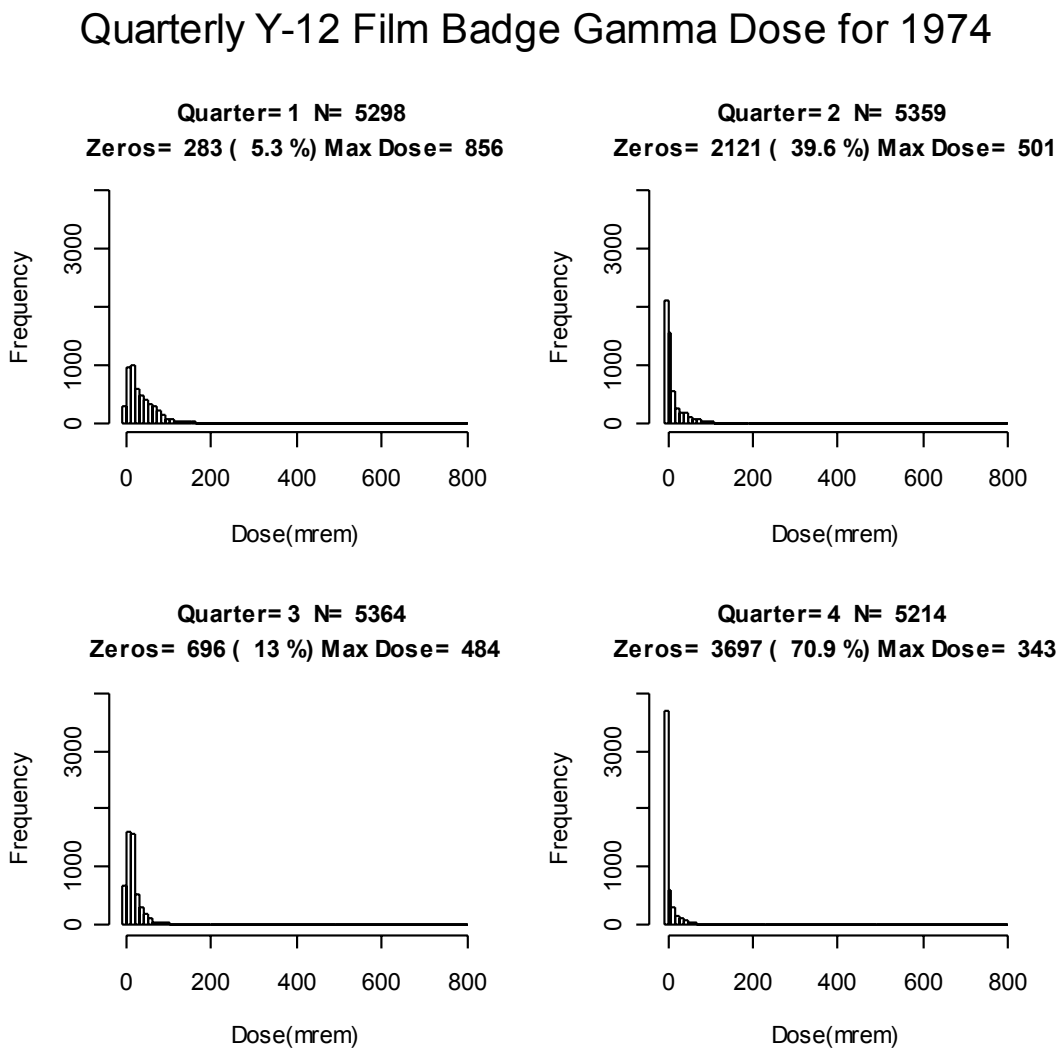

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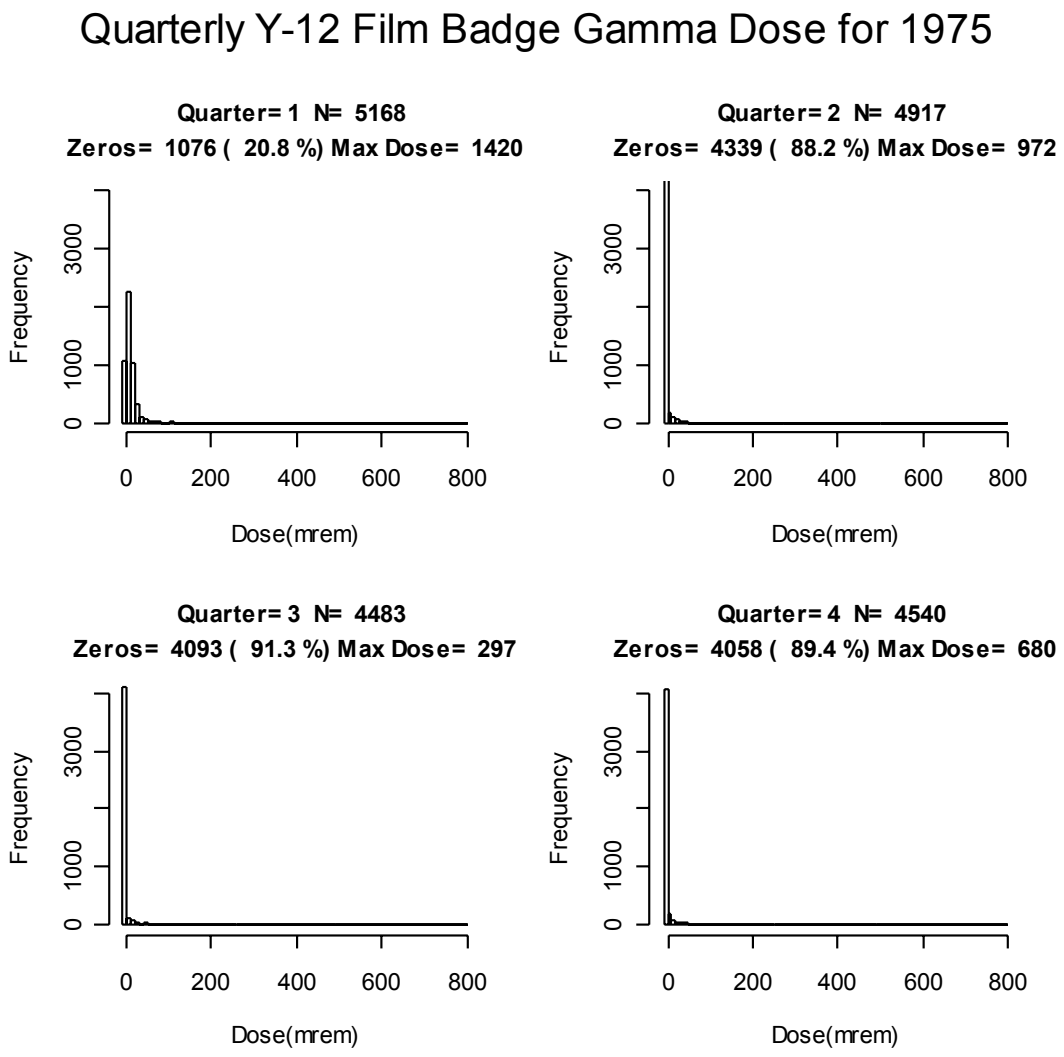

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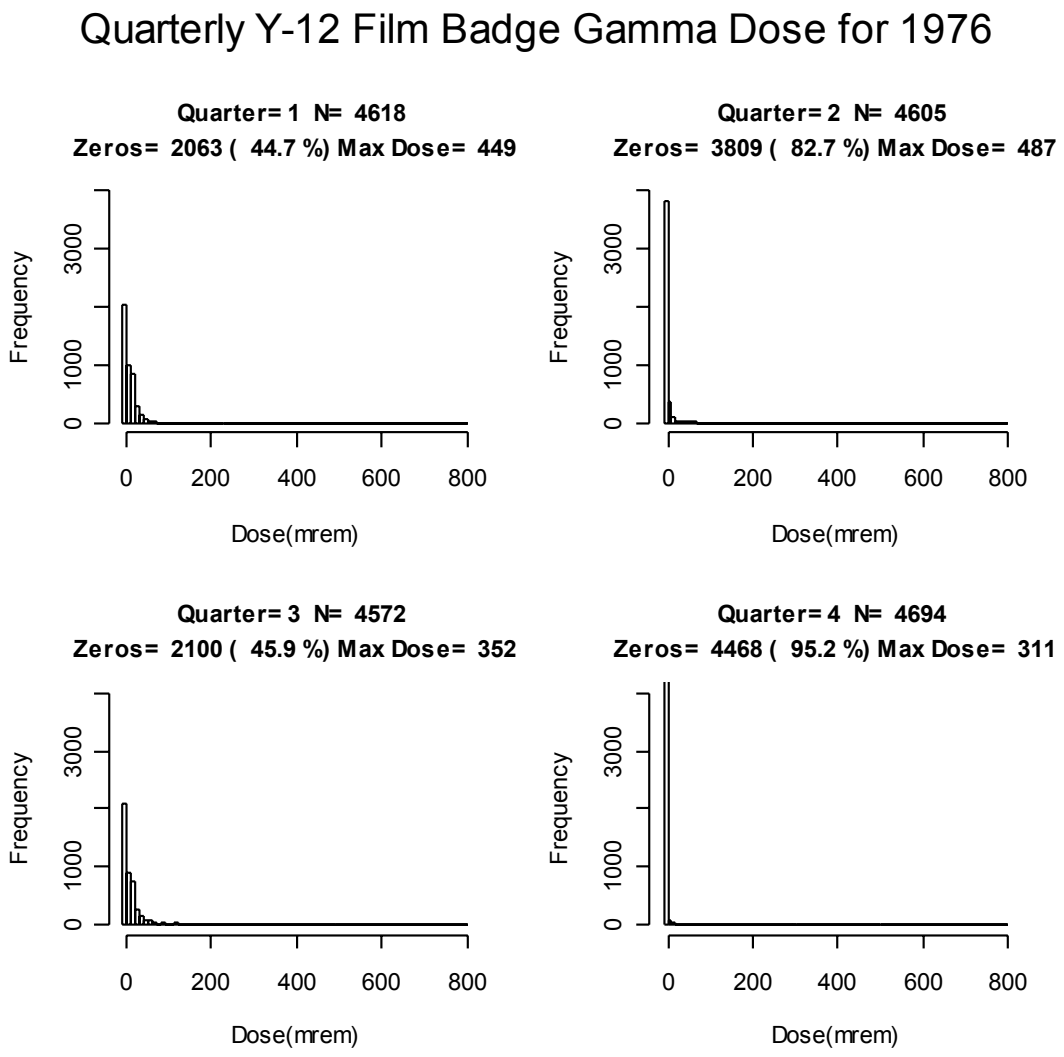

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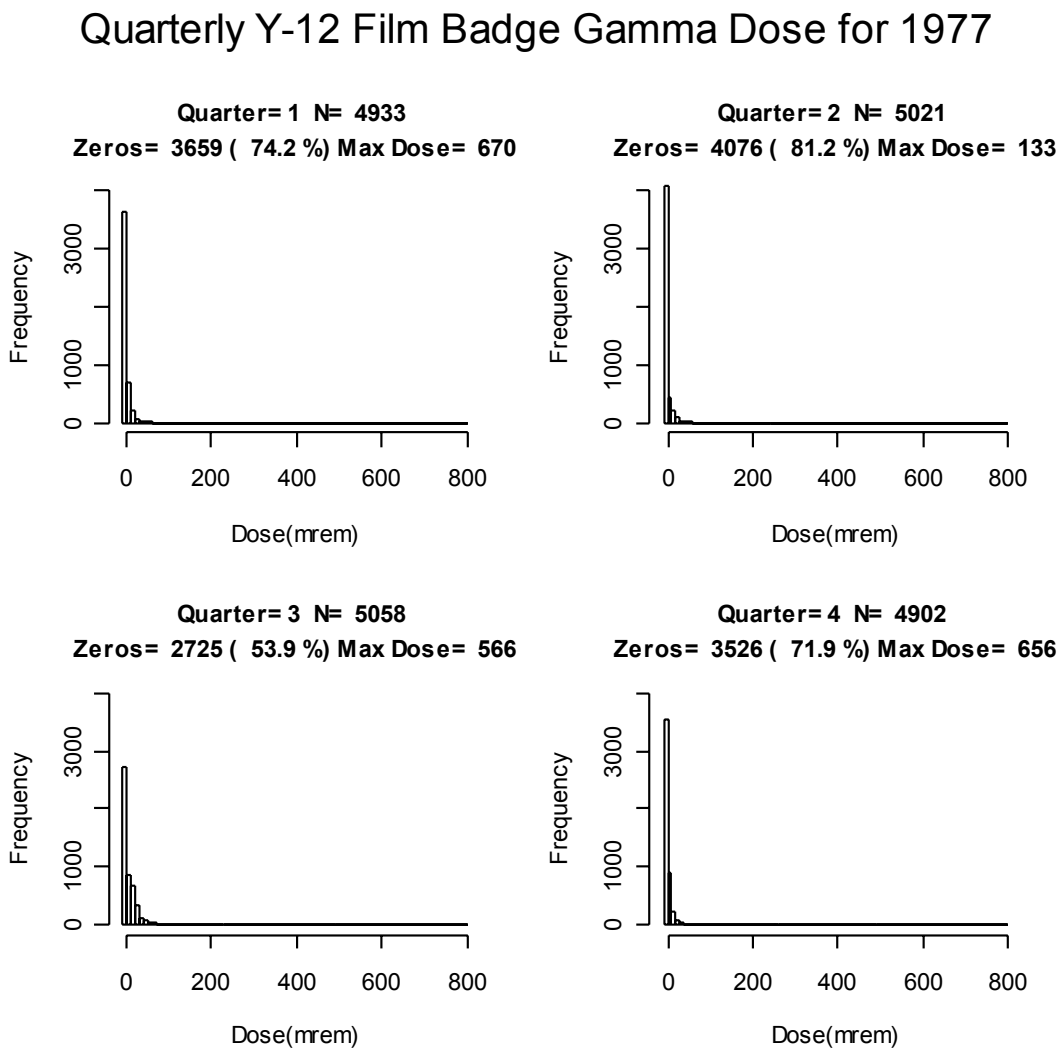

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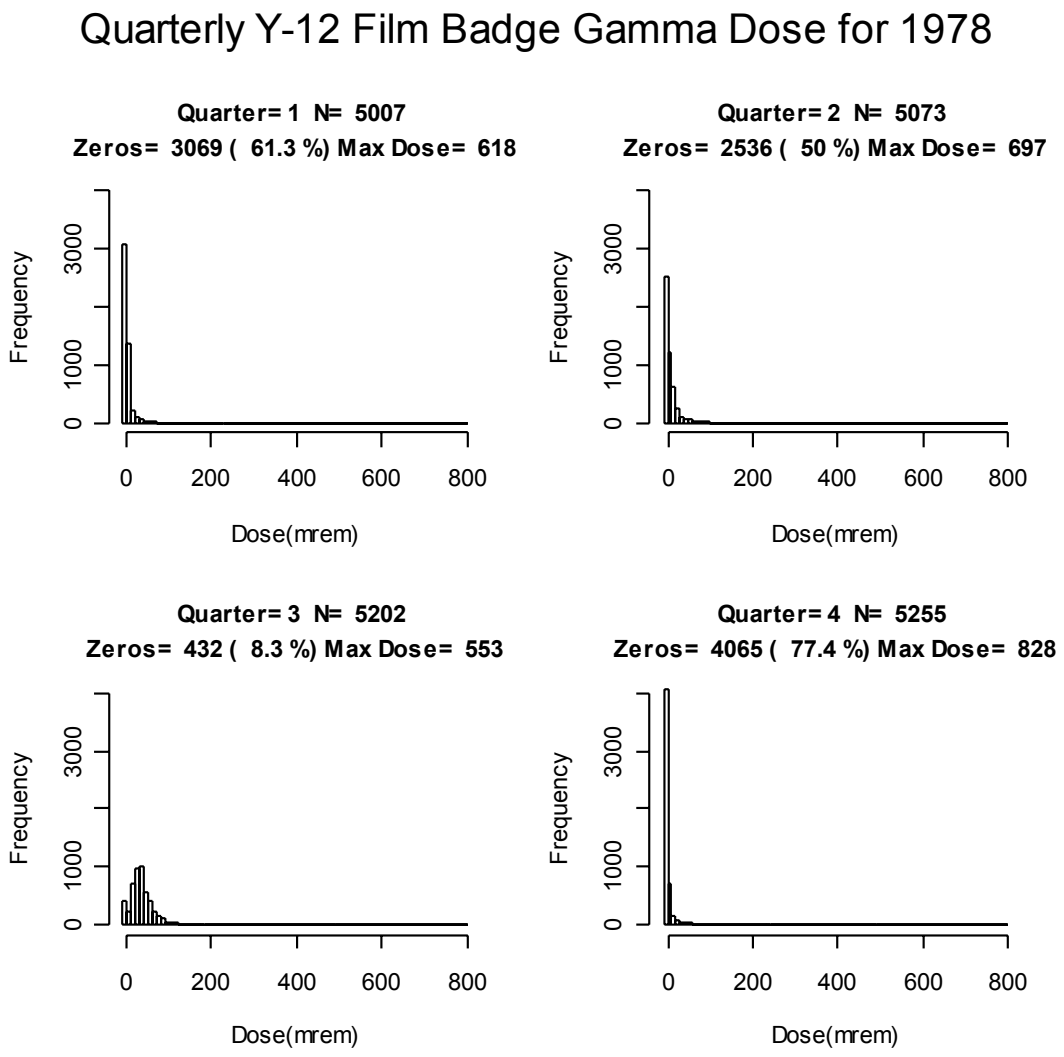

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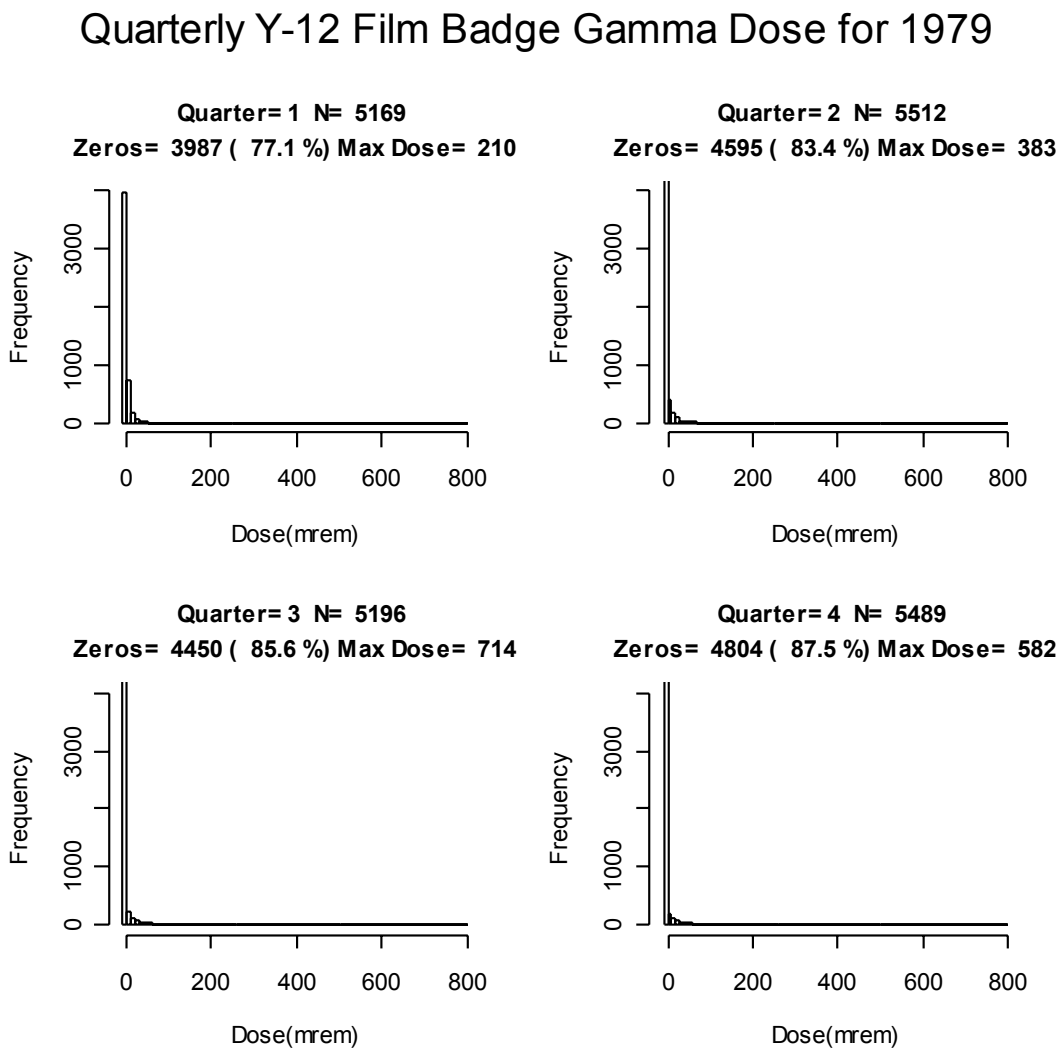
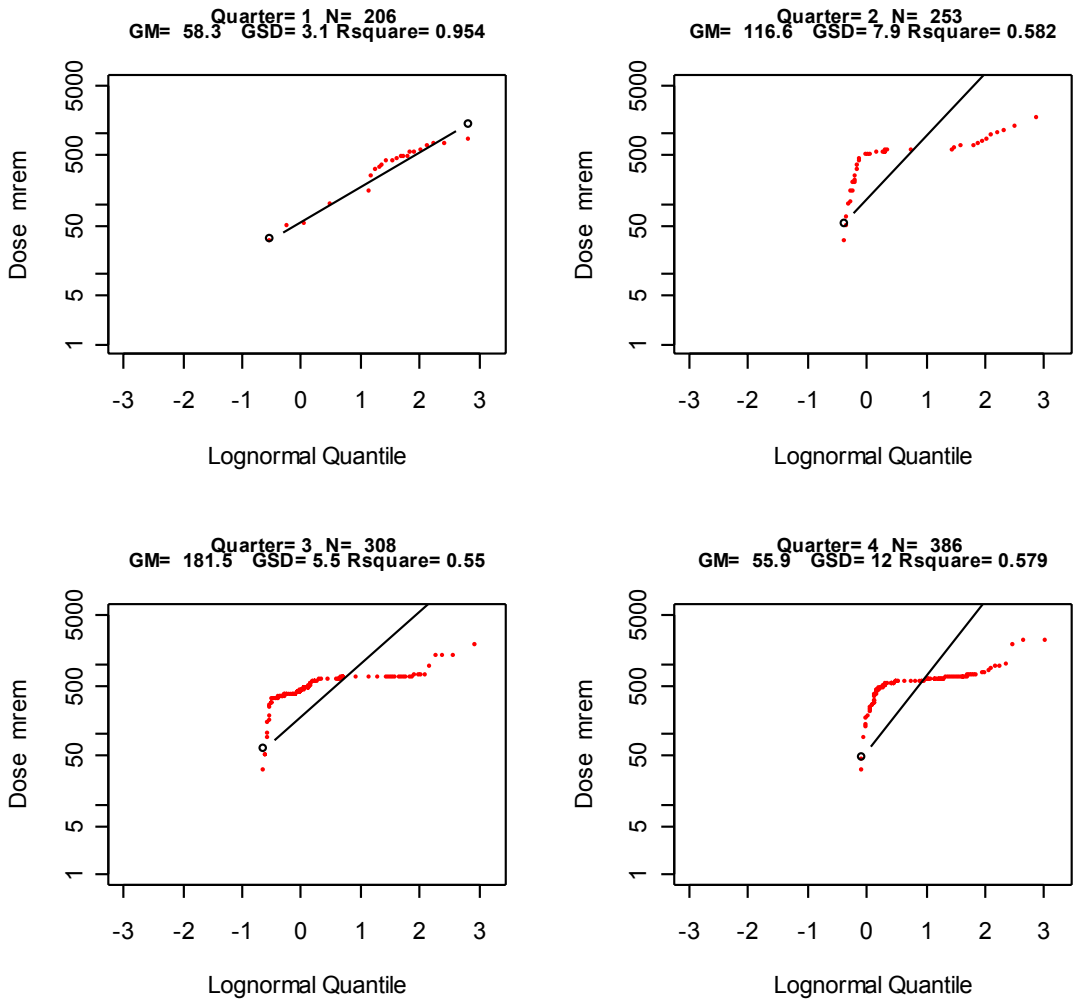


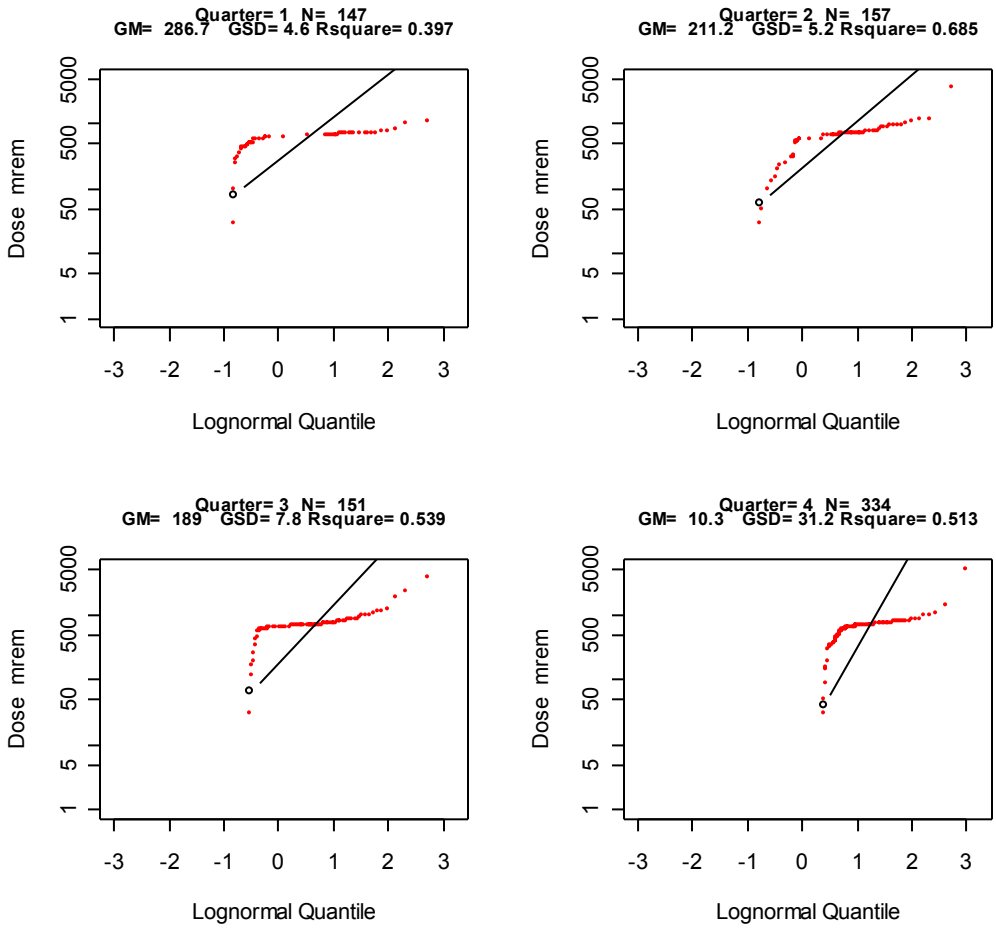
Historical Evaluation of the Film Badge Dosimetry Program at the Y-12 Facility in Oak Ridge, Tennessee, Part 1 – Gamma Radiation

Appendix B

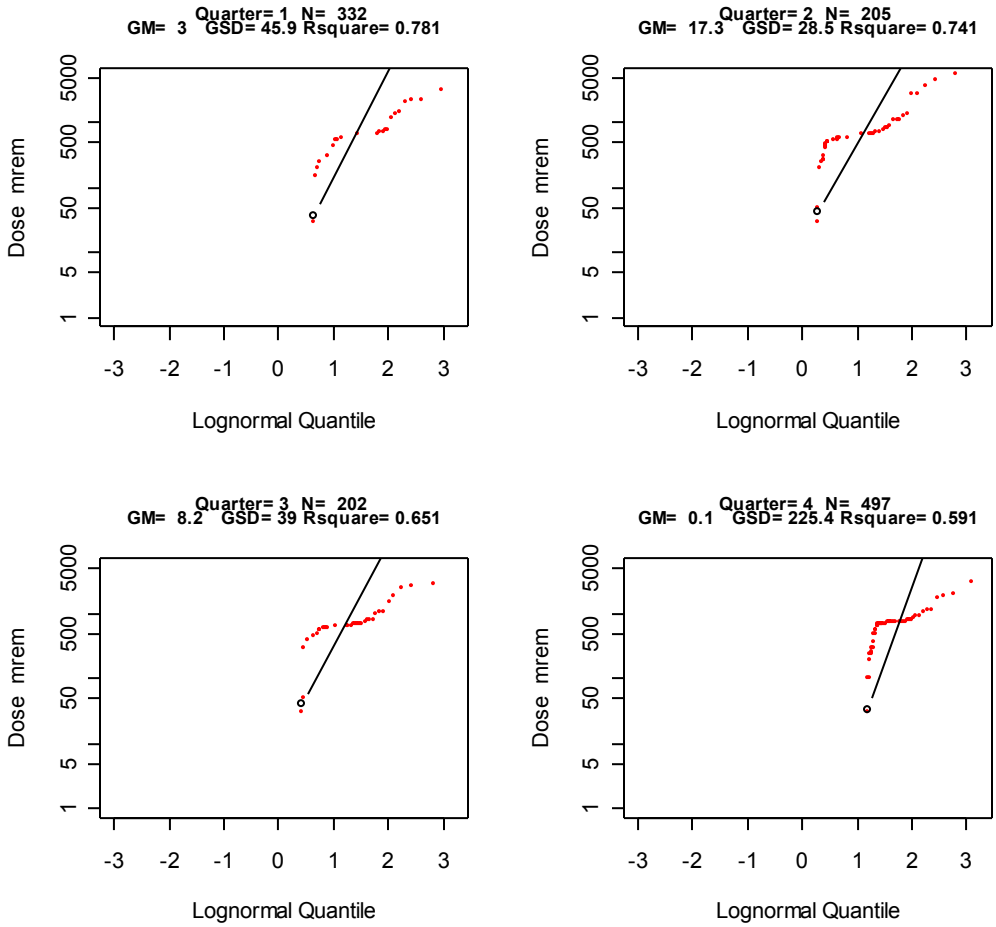
Quarterly Y-12 Film Badge Gamma Dose for 1952



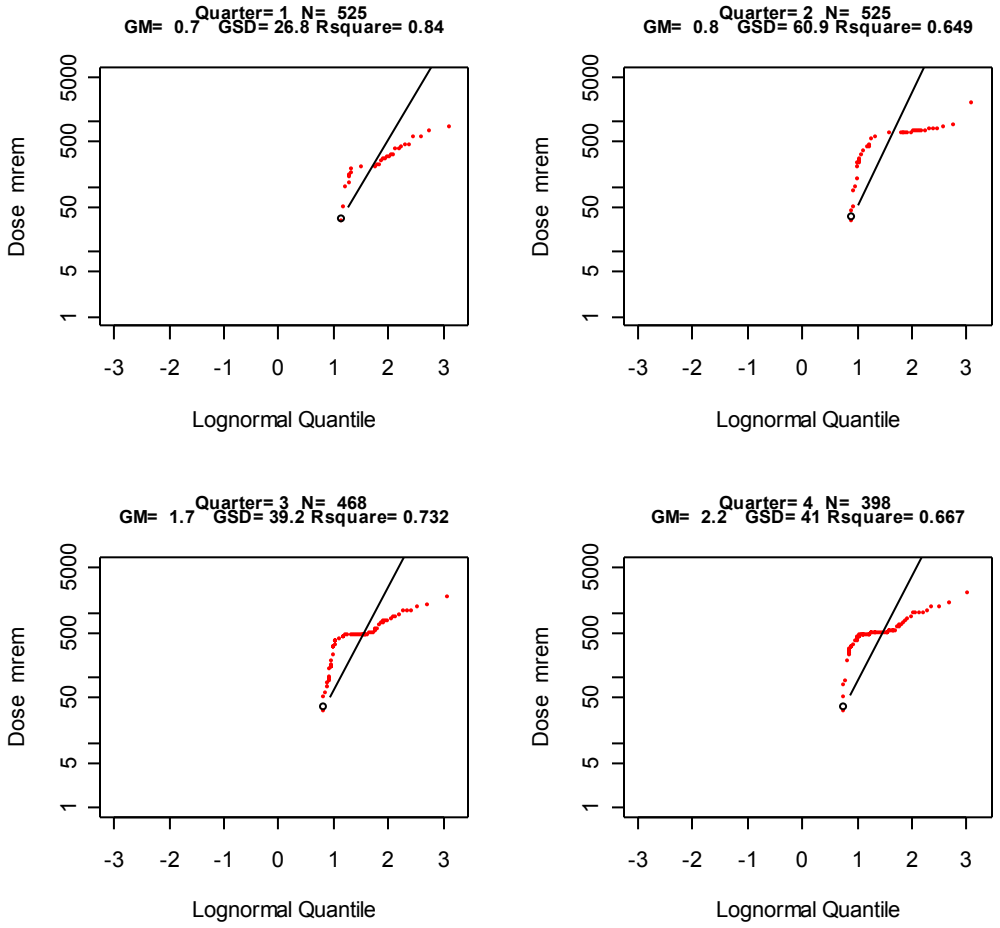
Quarterly Y-12 Film Badge Gamma Dose for 1953



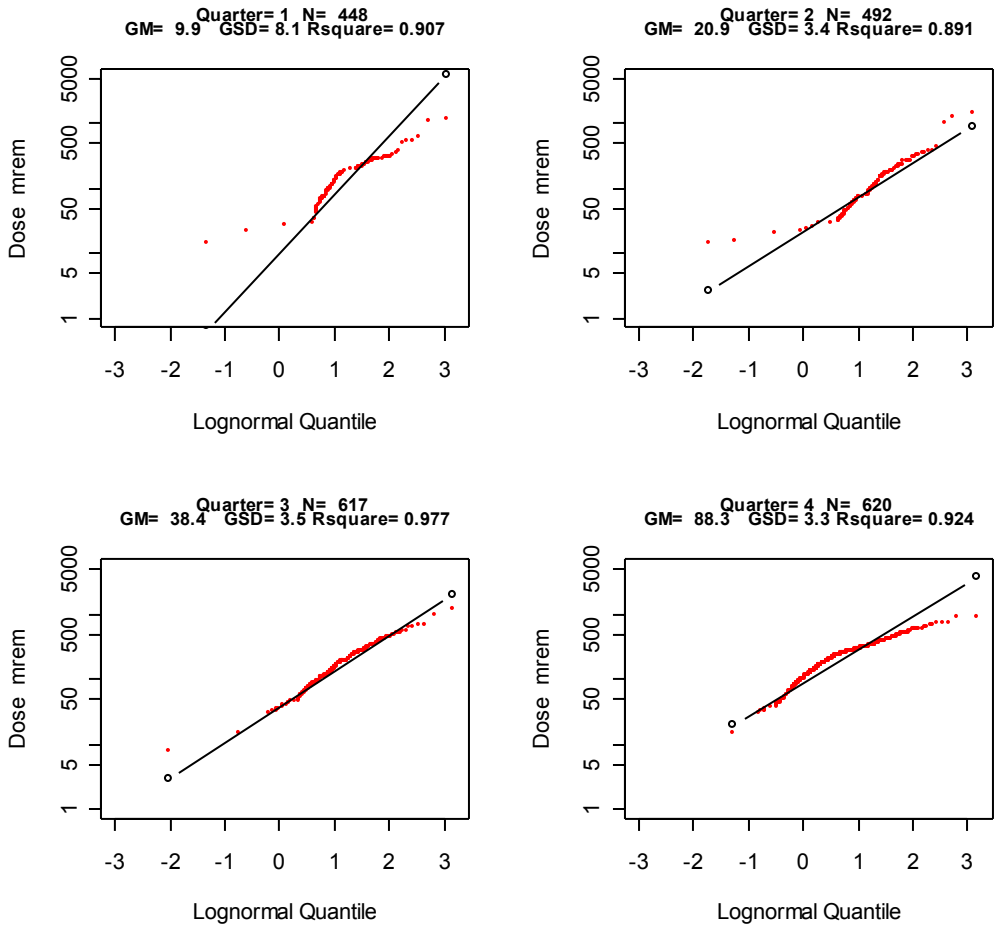
Quarterly Y-12 Film Badge Gamma Dose for 1954



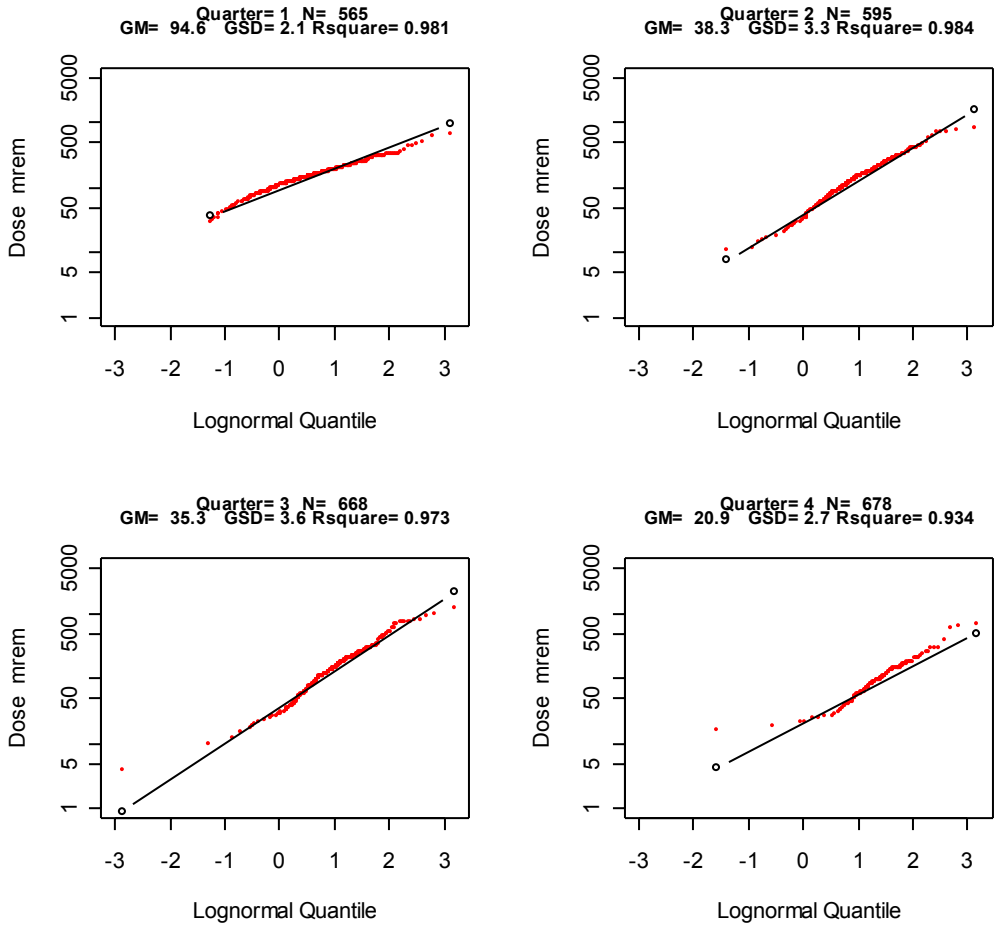
Quarterly Y-12 Film Badge Gamma Dose for 1955



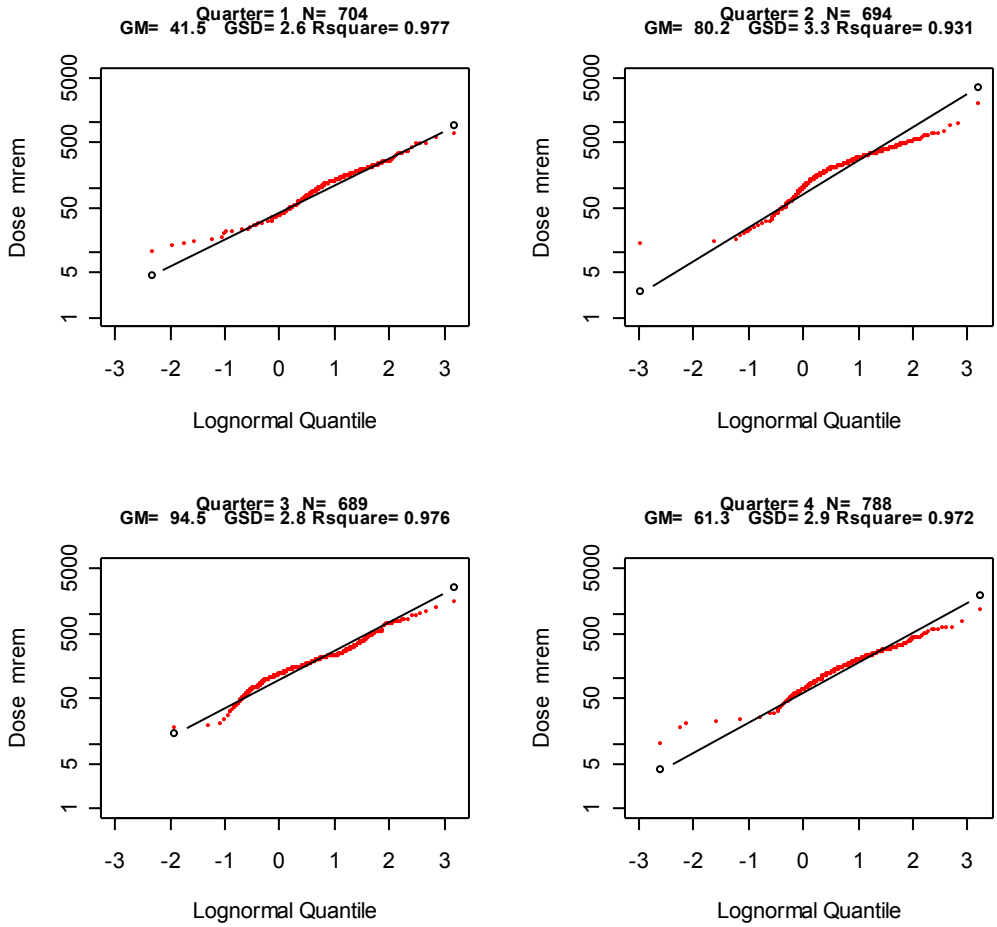
Quarterly Y-12 Film Badge Gamma Dose for 1956



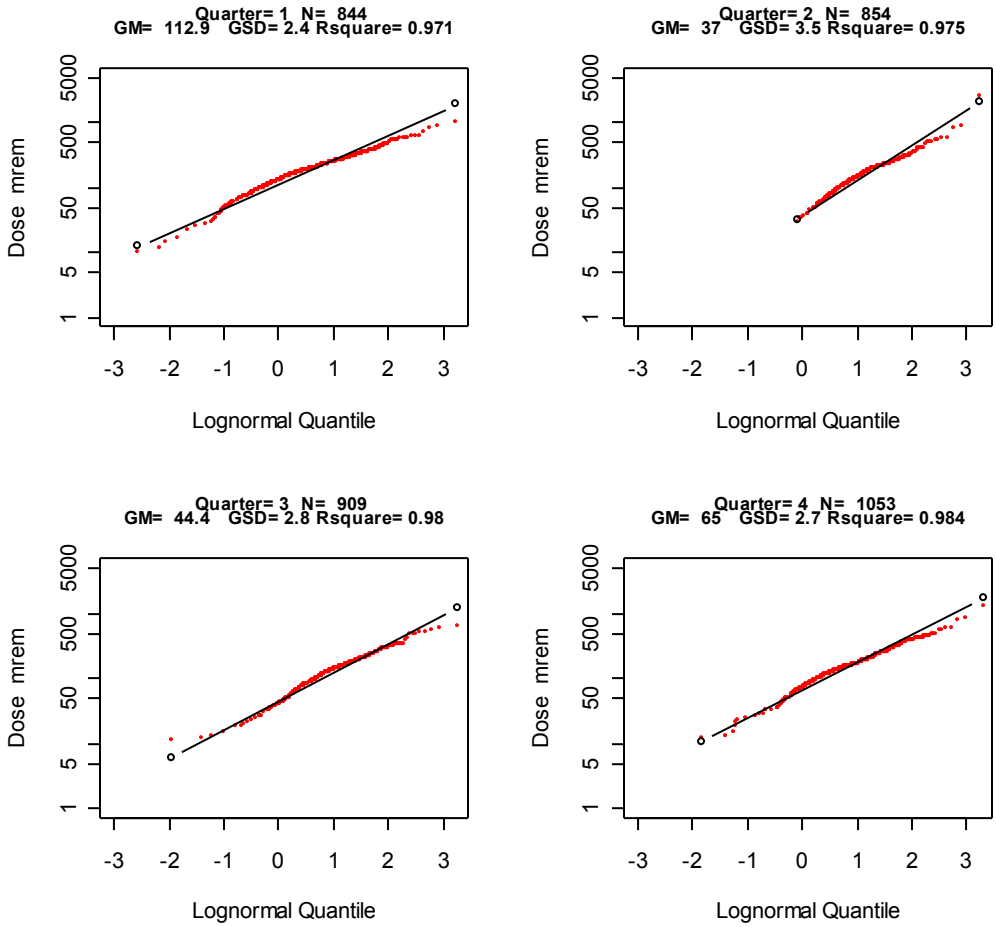
Quarterly Y-12 Film Badge Gamma Dose for 1957



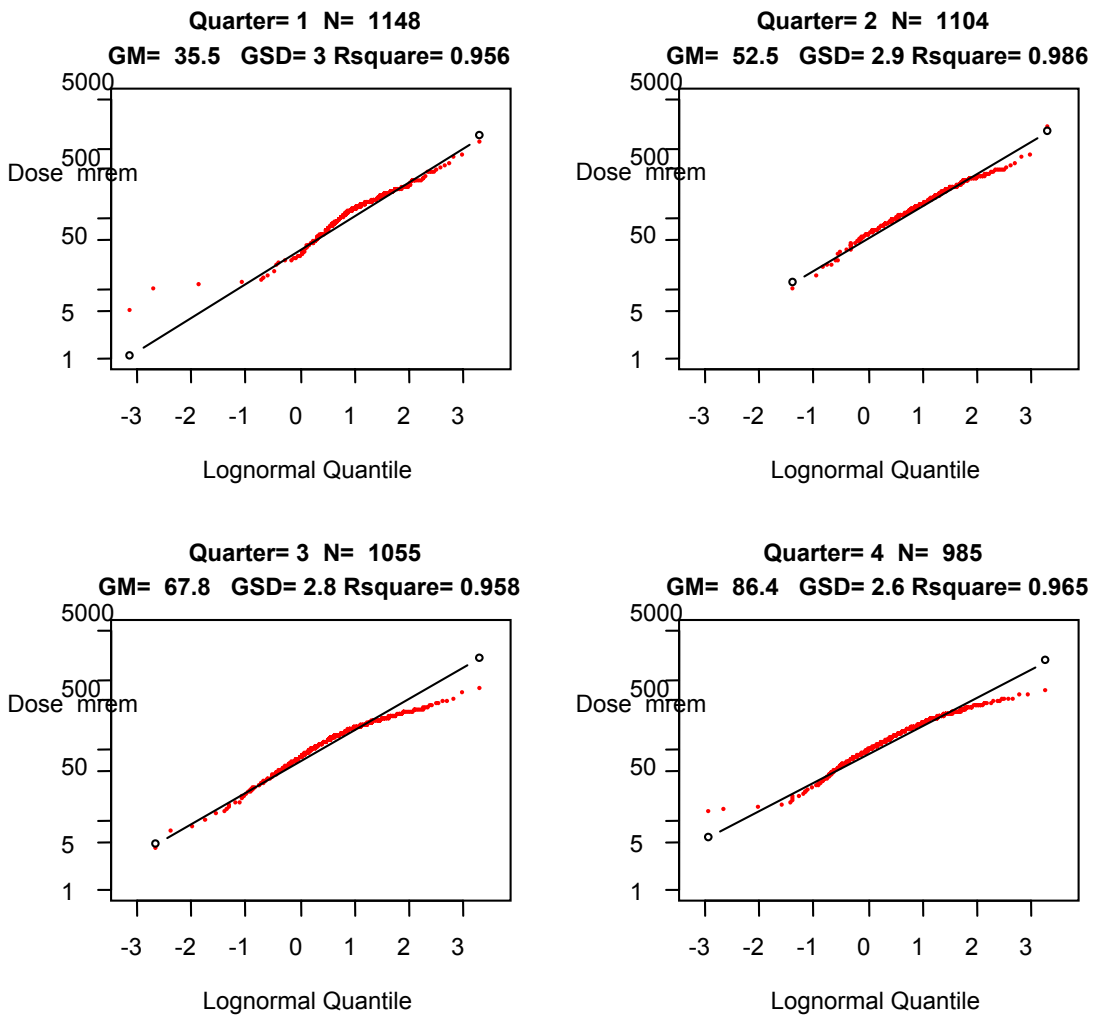
Quarterly Y-12 Film Badge Gamma Dose for 1958



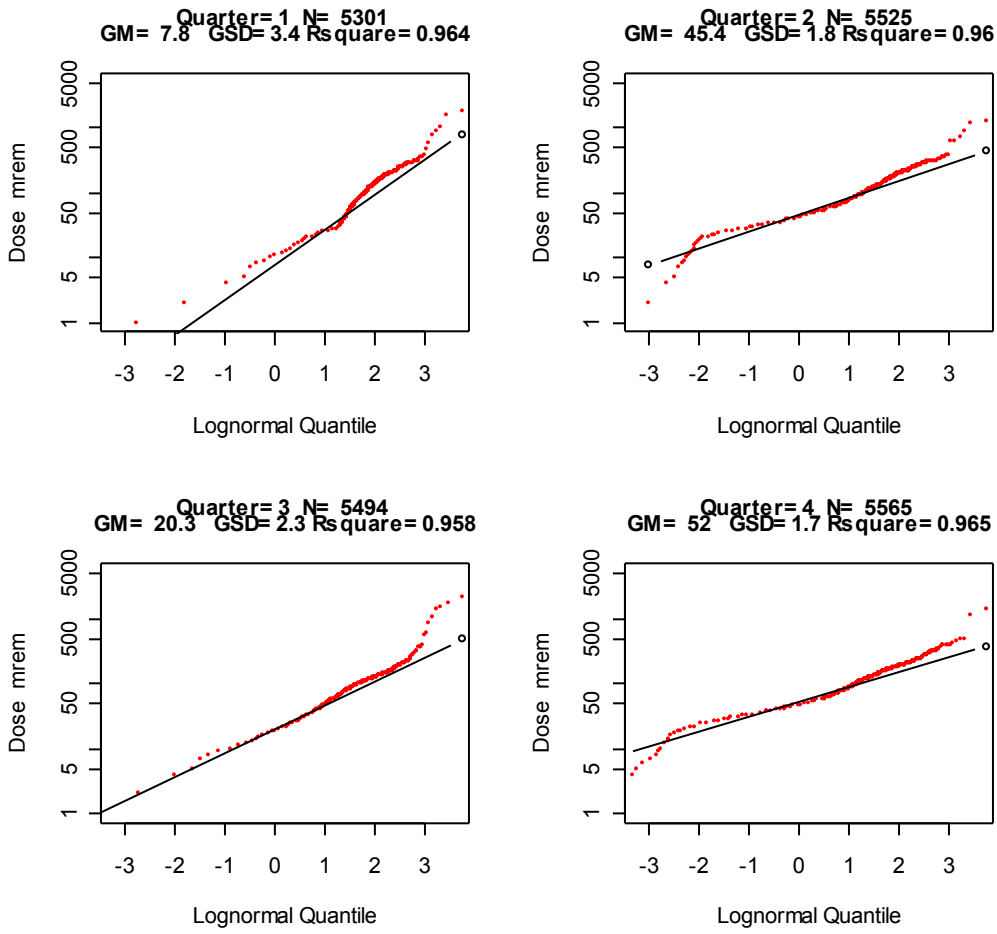
Quarterly Y-12 Film Badge Gamma Dose for 1959



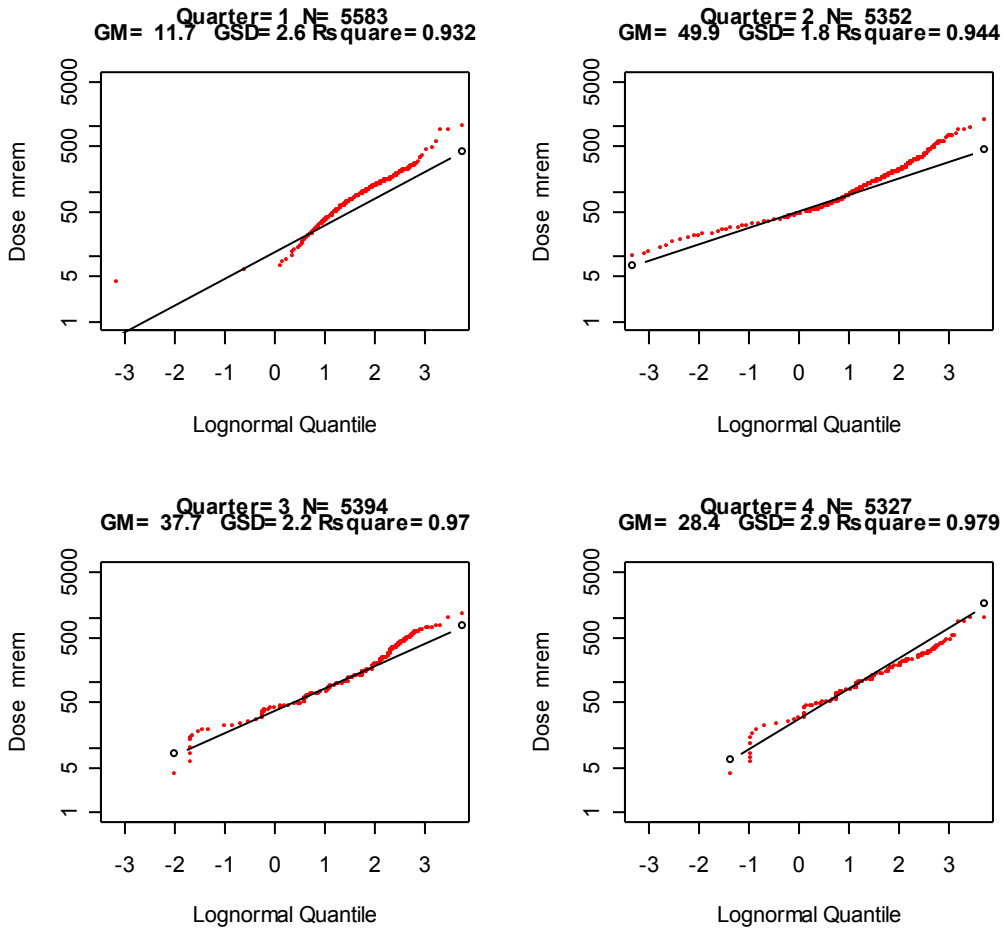
Quarterly Y-12 Film Badge Gamma Dose for 1960



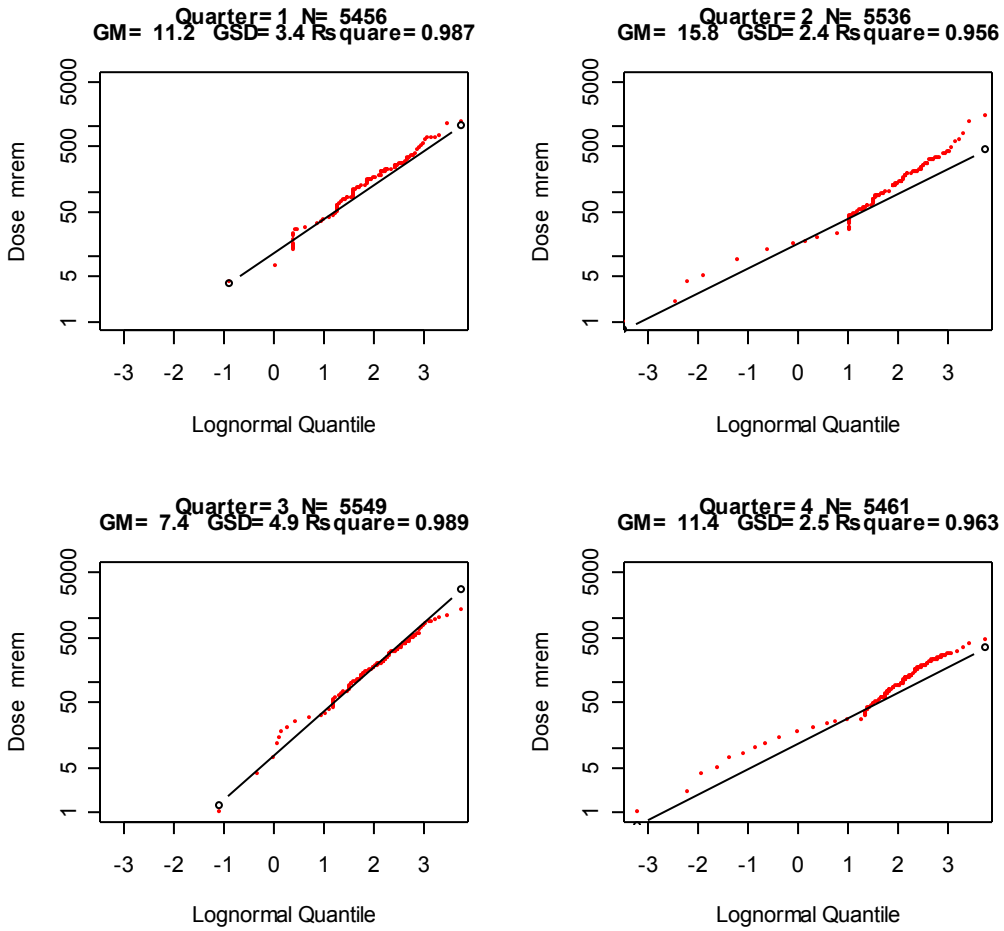
Quarterly Y-12 Film Badge Gamma Dose for 1961



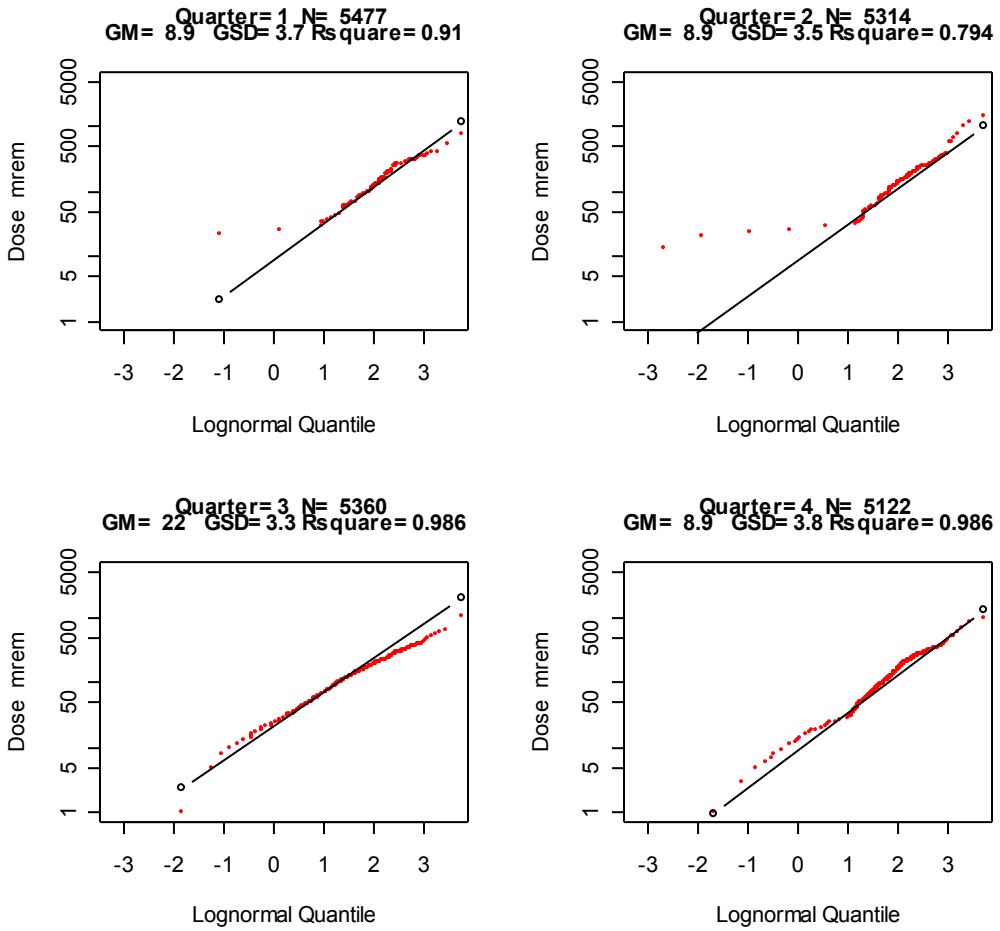
Quarterly Y-12 Film Badge Gamma Dose for 1962



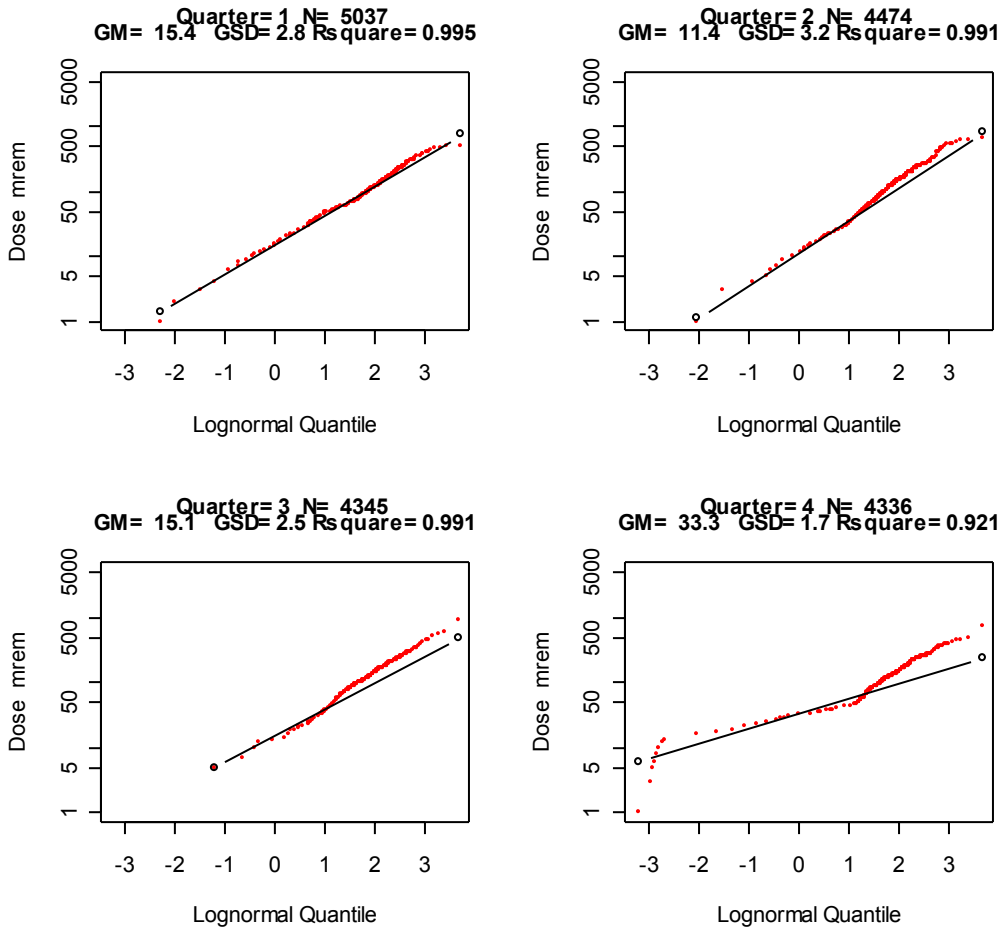
Quarterly Y-12 Film Badge Gamma Dose for 1963



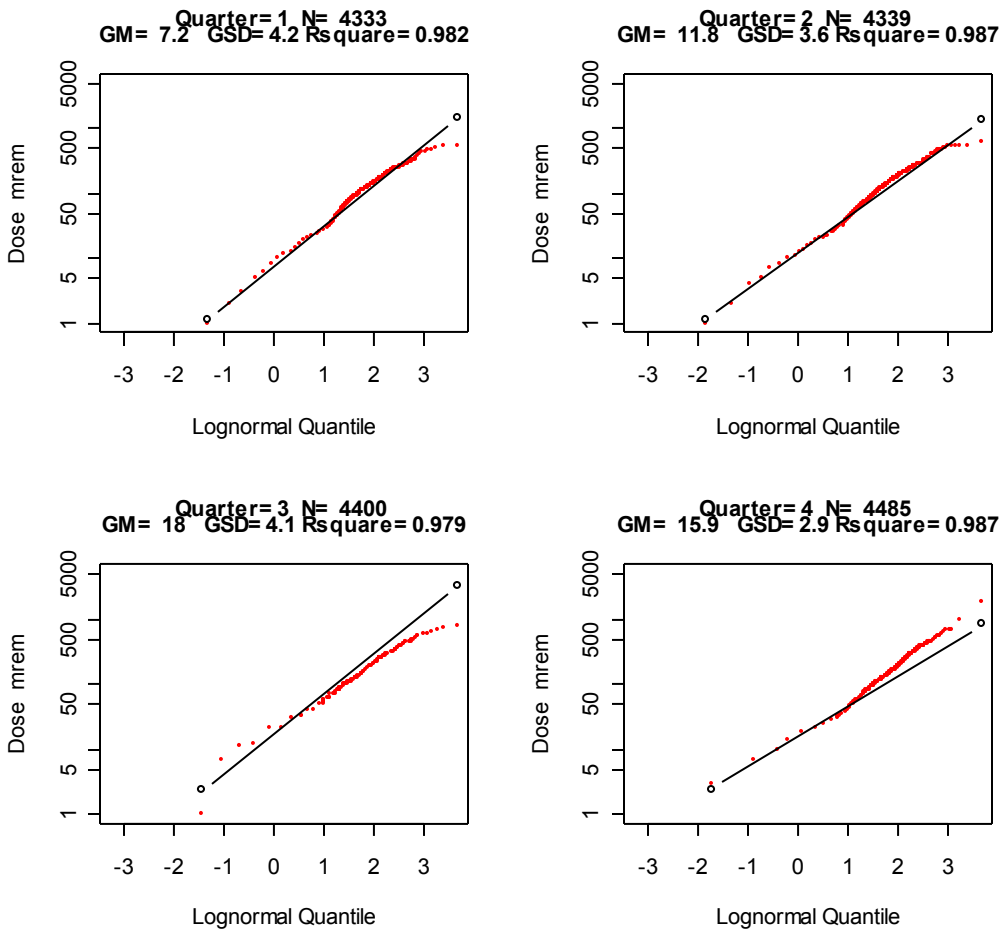
Quarterly Y-12 Film Badge Gamma Dose for 1964



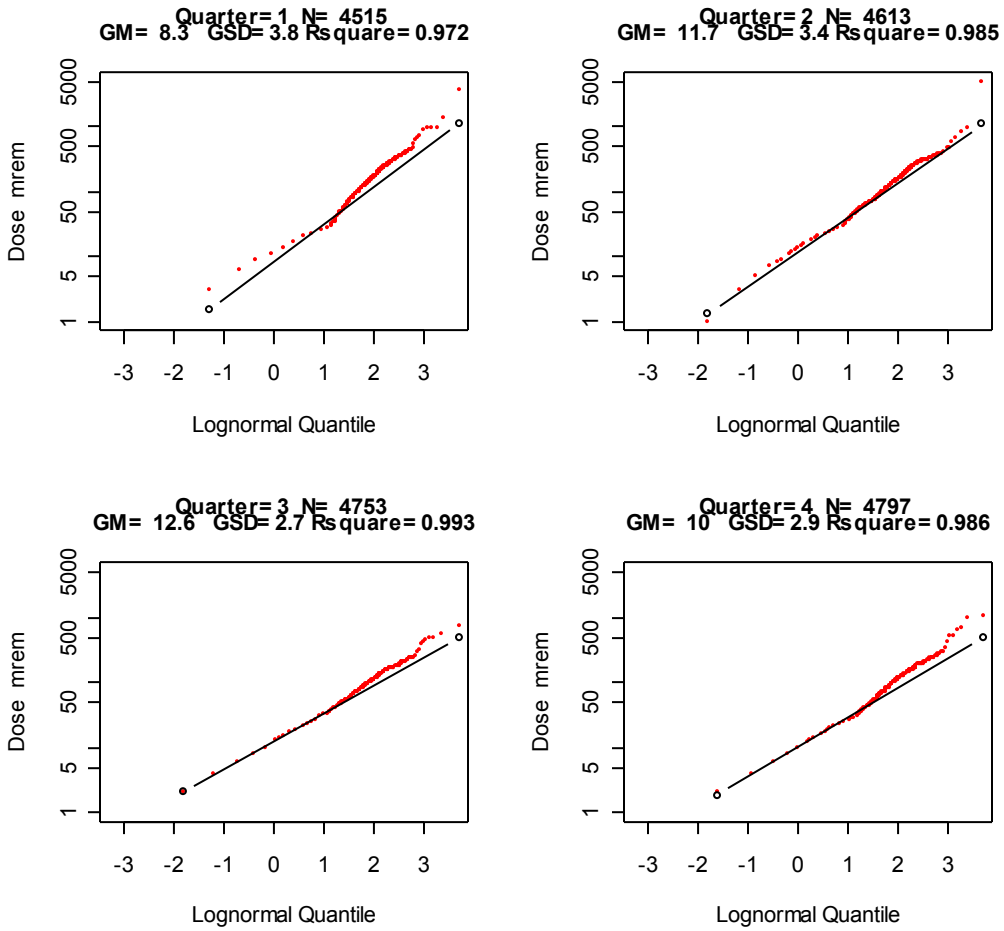
Quarterly Y-12 Film Badge Gamma Dose for 1965



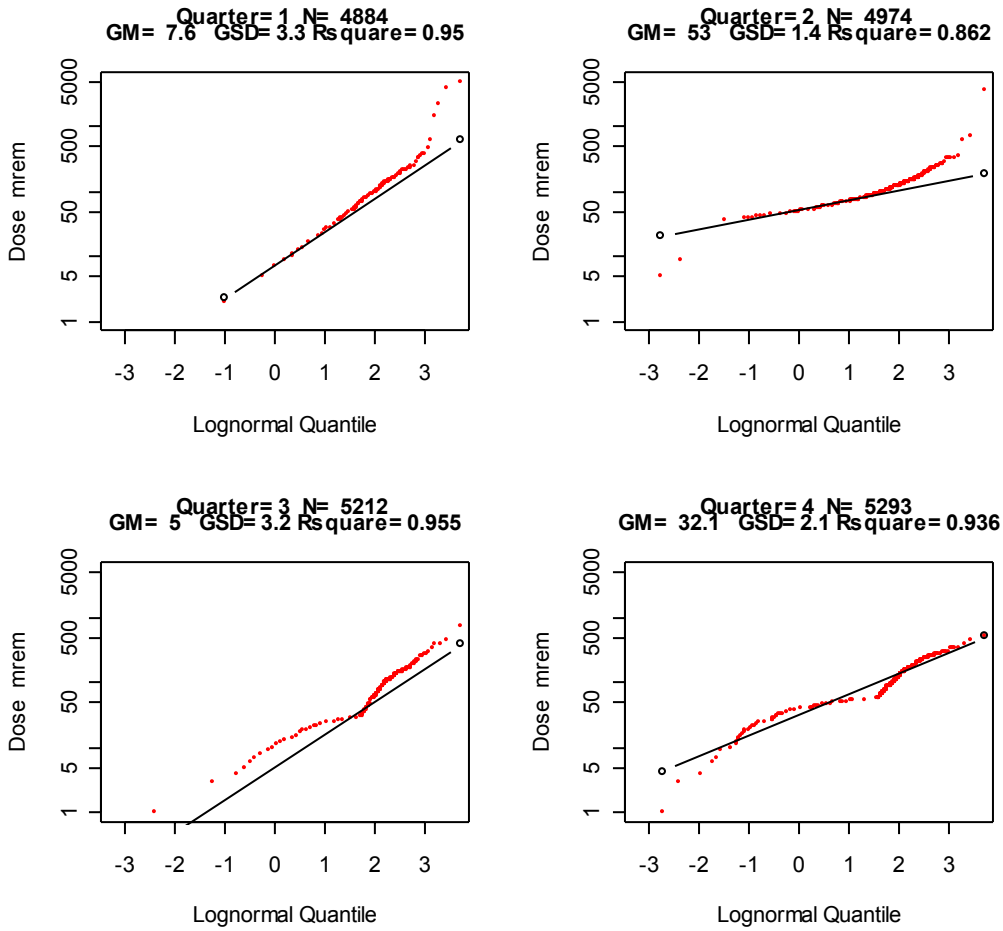
Quarterly Y-12 Film Badge Gamma Dose for 1966



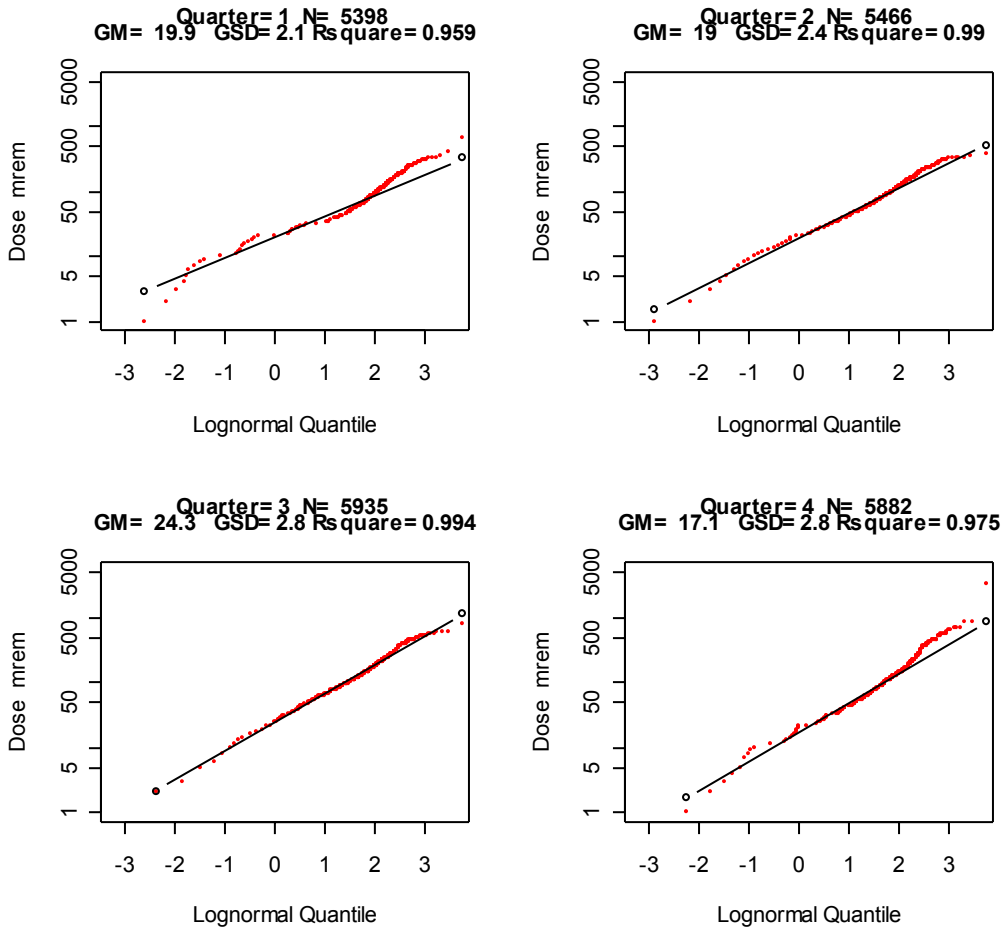
Quarterly Y-12 Film Badge Gamma Dose for 1967



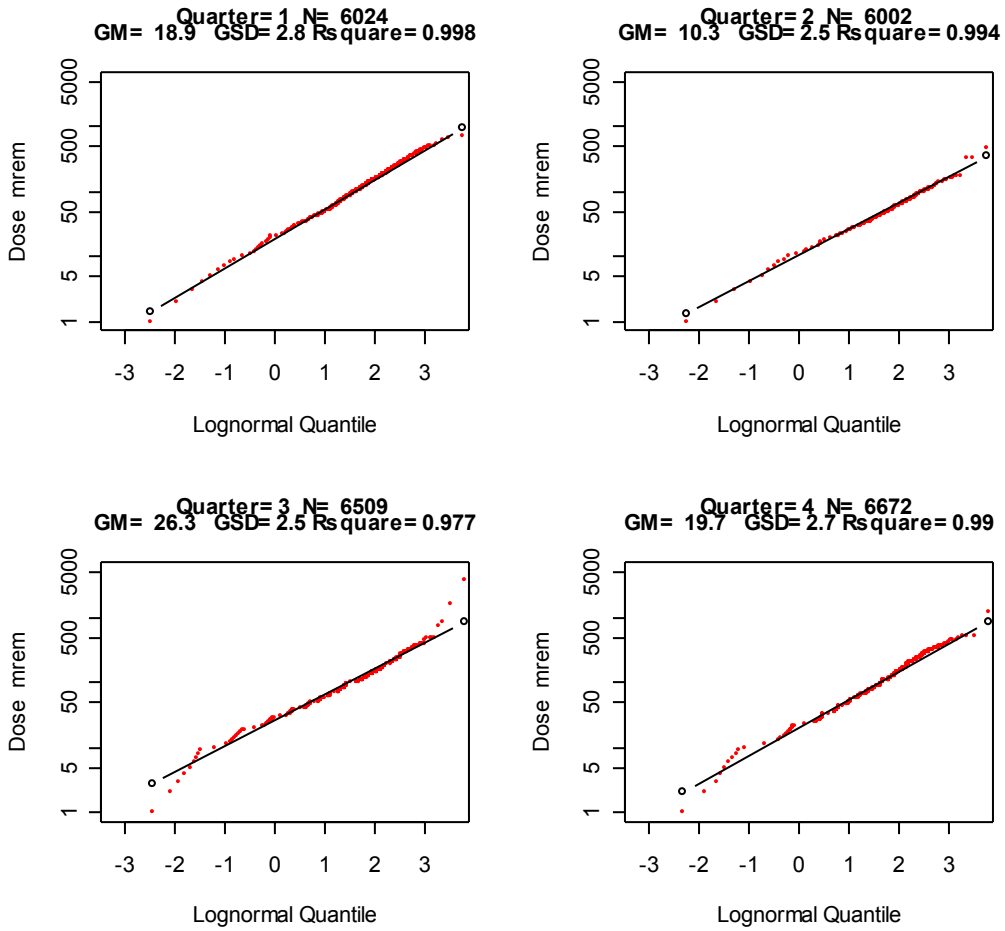
Quarterly Y-12 Film Badge Gamma Dose for 1968



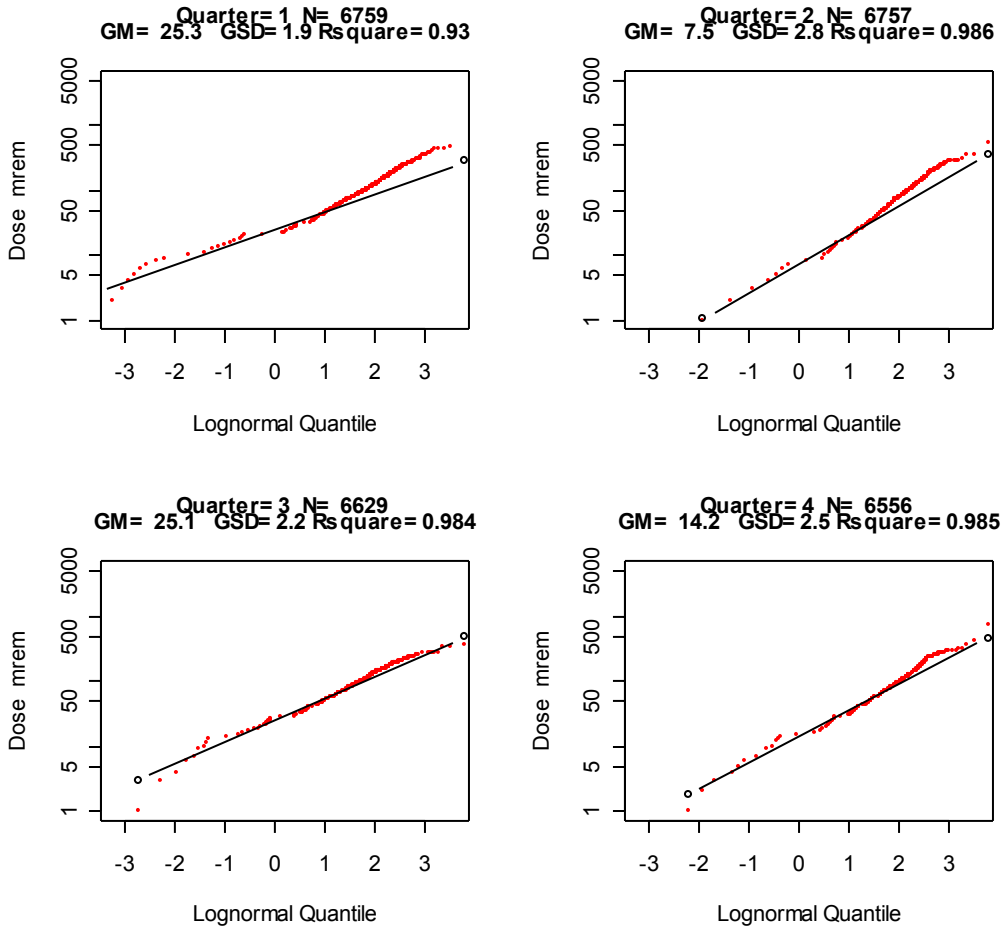
Quarterly Y-12 Film Badge Gamma Dose for 1969



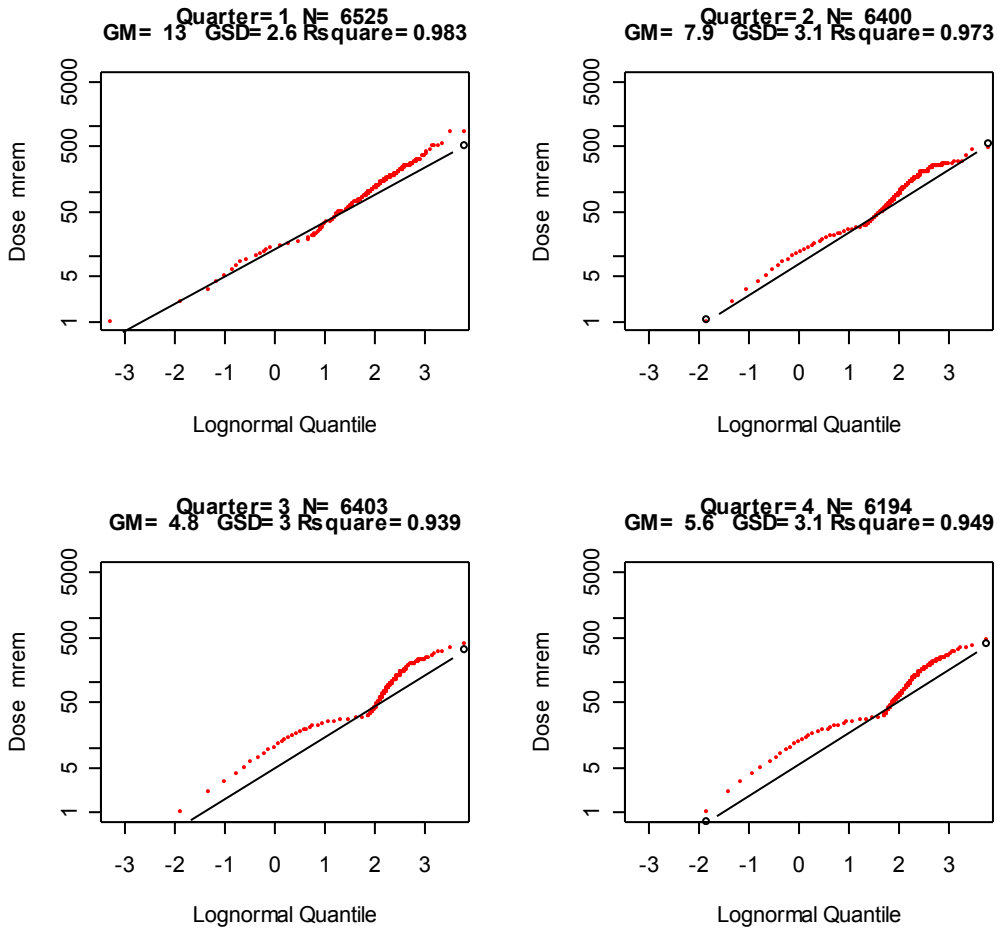
Quarterly Y-12 Film Badge Gamma Dose for 1970



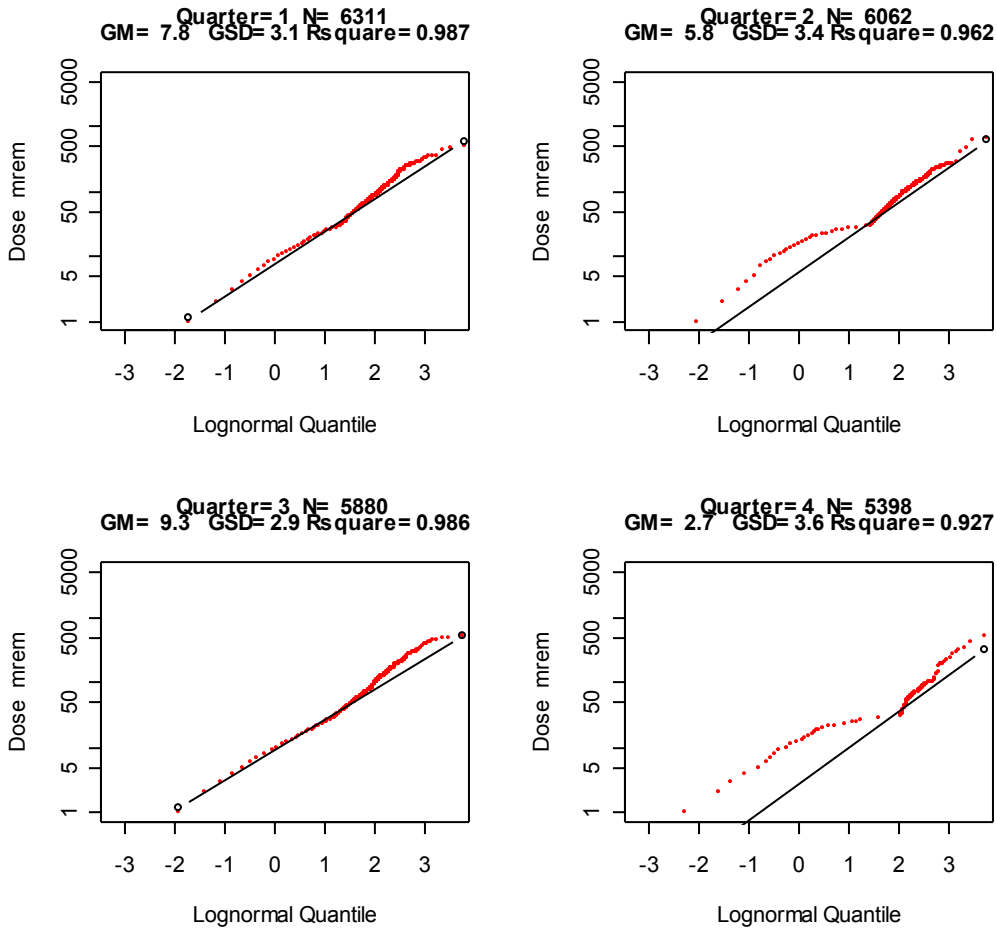
Quarterly Y-12 Film Badge Gamma Dose for 1971



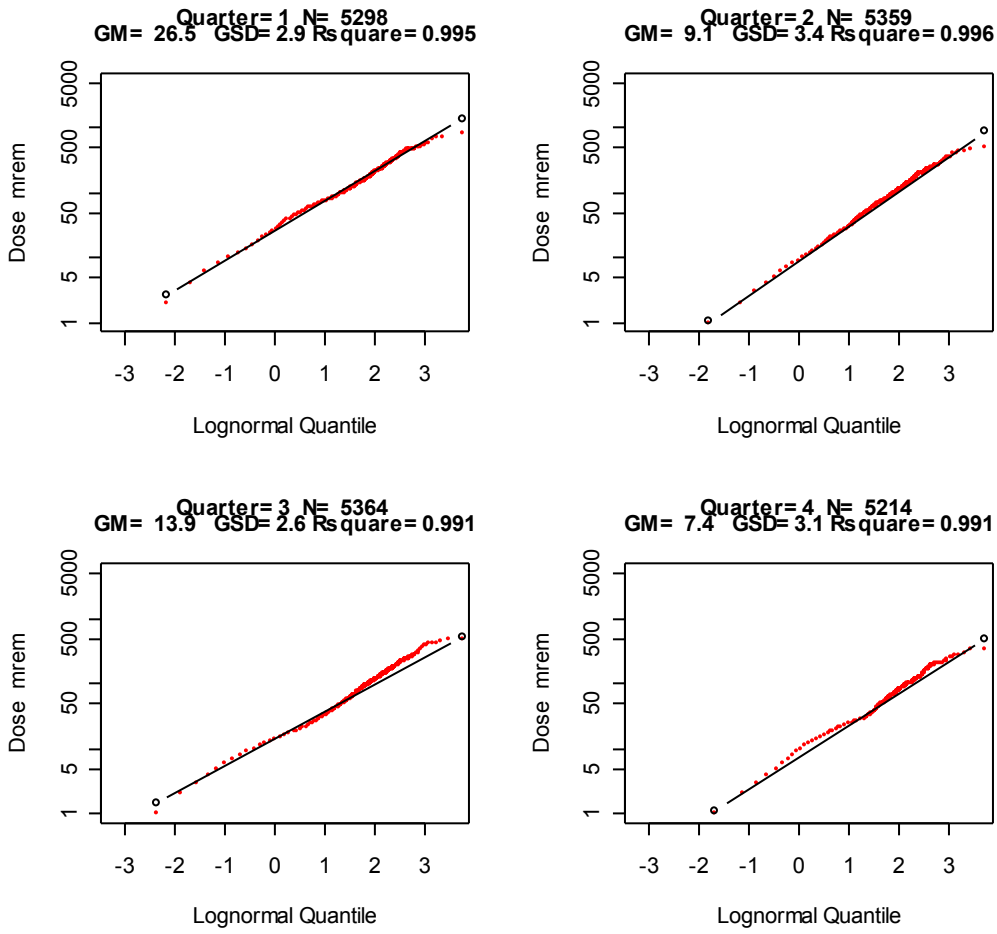
Quarterly Y-12 Film Badge Gamma Dose for 1972



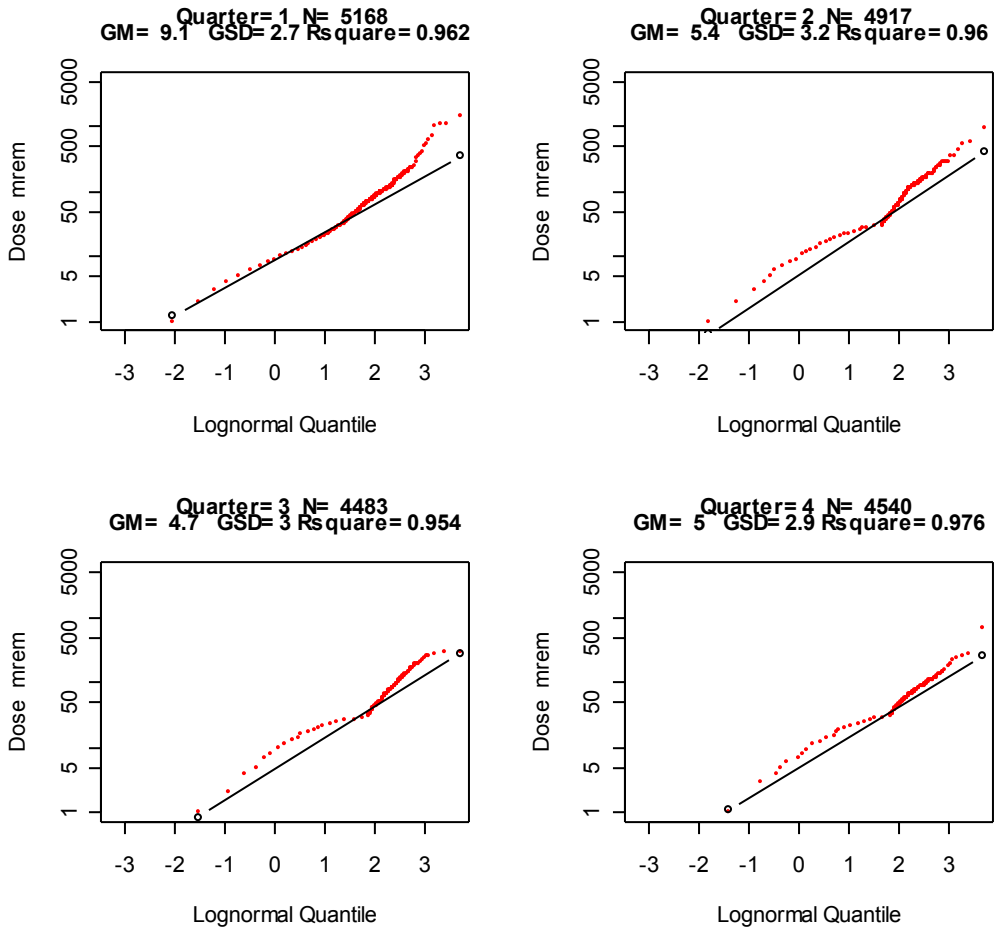
Quarterly Y-12 Film Badge Gamma Dose for 1973



Quarterly Y-12 Film Badge Gamma Dose for 1974



Quarterly Y-12 Film Badge Gamma Dose for 1975



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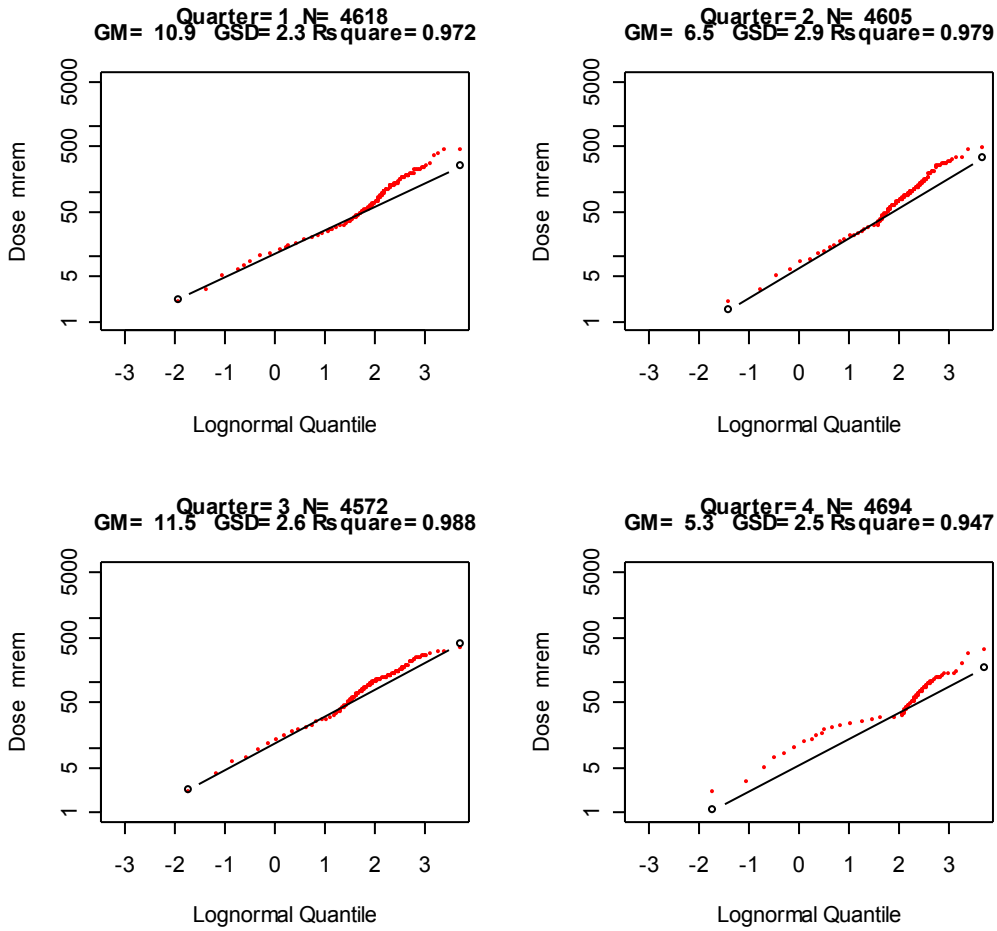
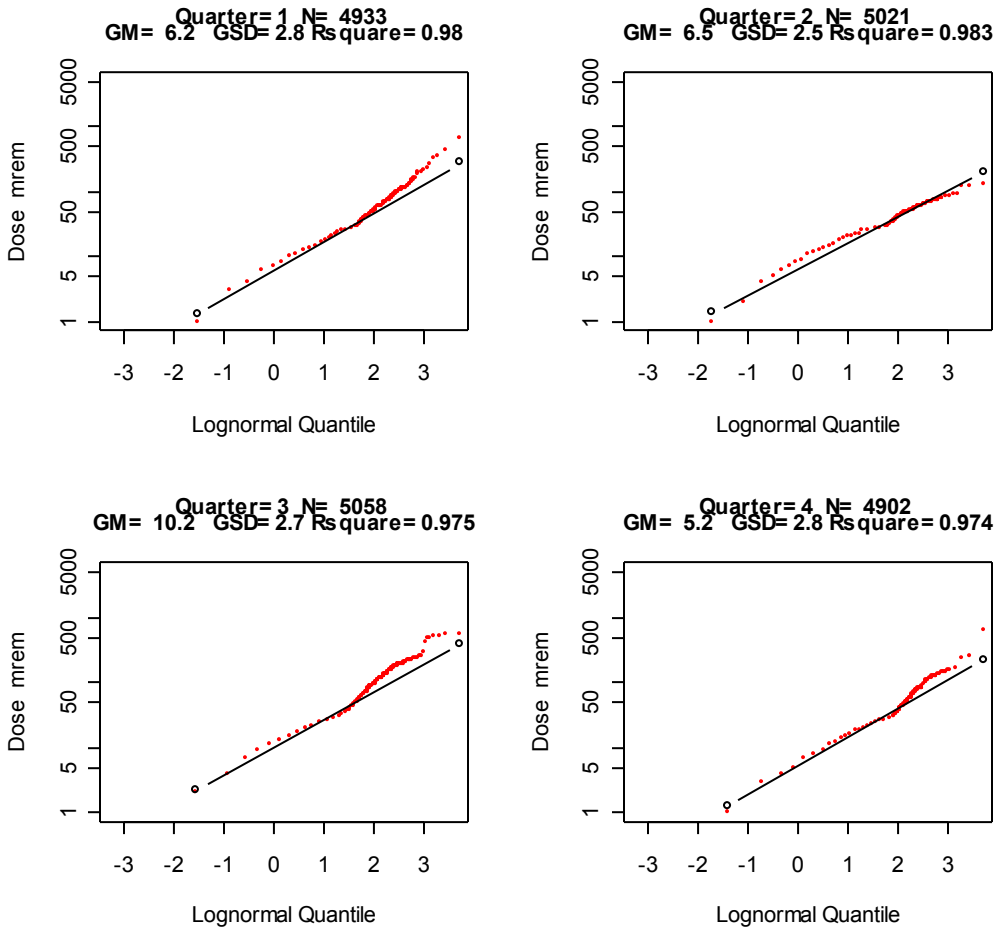
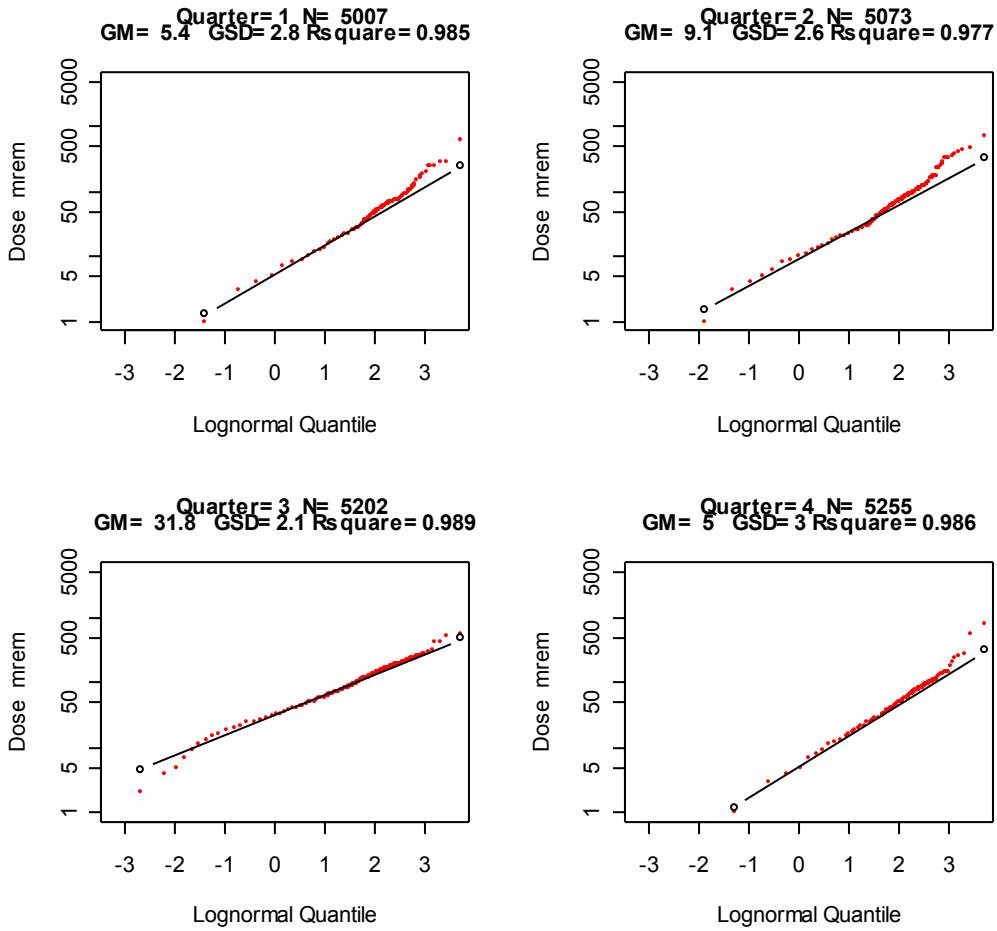


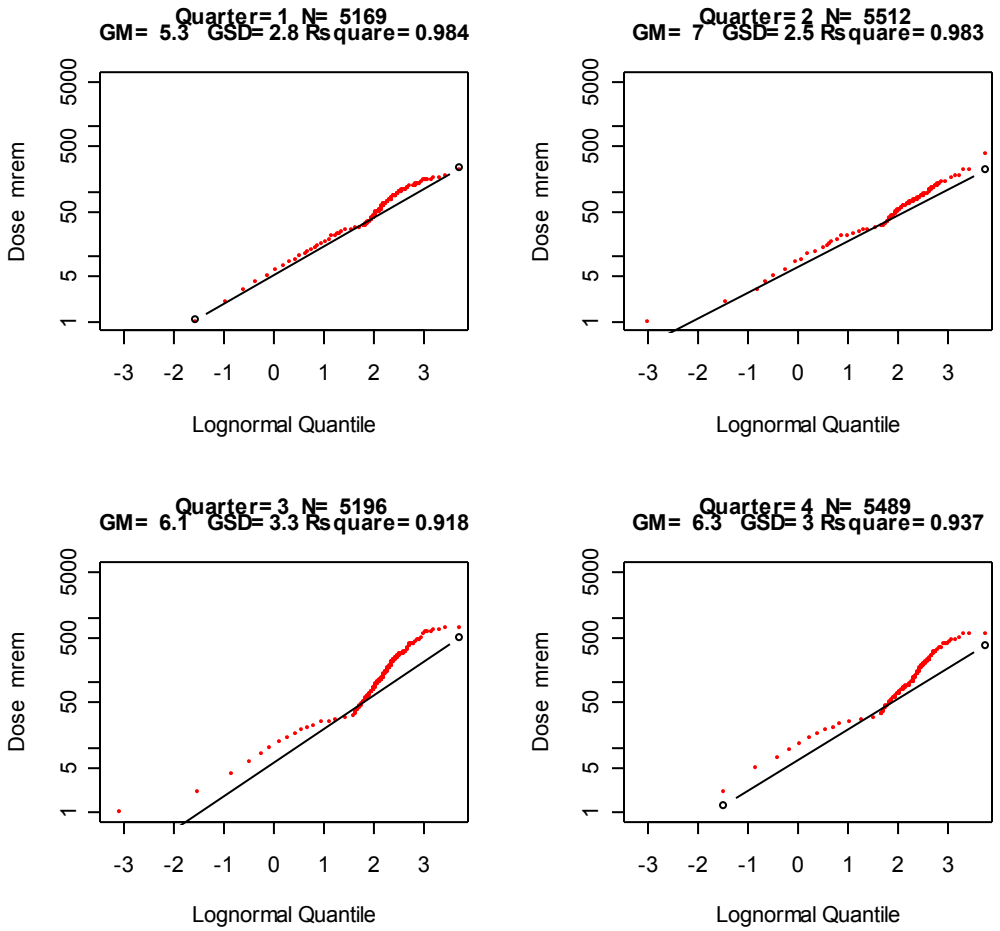
Quarterly Y-12 Film Badge Gamma Dose for 1977



Quarterly Y-12 Film Badge Gamma Dose for 1978



Quarterly Y-12 Film Badge Gamma Dose for 1979



Historical Evaluation of the Film Badge Dosimetry Program at the Y-12 Facility in Oak Ridge, Tennessee, Part 1 – Gamma Radiation

Appendix C: Memos and Resume of C.M. West

Charles Maxwell West

Senior Health Physicist,
Center for Epidemiologic Research

EDUCATION:

Birmingham Southern College, Birmingham, AL; B.S.; 1942; Chemistry/Math
University of Tennessee, Knoxville, TN (60 Qtr Hrs); 1960-65; Physics, Math, Statistics

PROFESSIONAL EXPERIENCE:

Associate Health Physicist, Union Carbide Corporation, Nuclear Division, Y-12 Plant, Oak Ridge, TN, 1954.

Health Physics Supervisor, Union Carbide Corporation, Nuclear Division, Y-12 Plant, Oak Ridge, TN, 1956.

Senior Staff Health Physicist, Martin Marietta Energy Systems, Inc., Y-12 Plant, Oak Ridge, TN 1982.

Health Physicist, Radiation Emergency Assistance Center/Training Site, Oak Ridge Associated Universities, Oak Ridge, TN, 1985.

Health Physicist, Center for Epidemiologic Research, Oak Ridge Associated Universities, Oak Ridge, TN, 1989.

Senior Health Physicist, Center for Epidemiologic Research, Oak Ridge Institute for Science and Education, Oak Ridge, TN, 1992.

HONORS/CERTIFICATIONS:

Certified by the American Board of Health Physicists, Comprehensive Practice, 1960.

Designated a Fellow in the National Health Physics Society, 1985.

Recipient of Distinguished Service Award, East Tennessee Chapter, Health Physics Society, 1983.

Member of the Health Physics Society Standards Committee/American National Standard Institute N13.22 Working Group on Bioassay Program for Uranium, 1988 and continuing.

Representative of the United States Government at Advisory Group Meeting to finalize an International Atomic Energy Agency safety guide titled "Safe Handling of Radionuclides," April-May 1991.

Consultant to the International Atomic Energy Agency to assist in the development of "A Method of Categorizing and Designation of Working Areas in which Unsealed Radioactive Materials are Used," for use in "Safe Handling of Radioisotopes in the Workplace," December 1991.

SELECTED PUBLICATIONS:

West CM: An evaluation of health physics problems associated with thorium and its daughters in a thorium purification and fabrication process. Health Phys 1962;8:279.

West CM and Reavis JP: Use of statistics in an applied health physics program. Health Phys 1964;10:345.

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Watson JE Jr., Wood JL, Tankersley WG, and West CM: Estimation of radiation doses for workers without monitoring data for retrospective epidemiologic studies. Health Phys 1994;67:402.

West CM, Watkins J, Tankersley WG, and Payne DD: Lung dose estimates from air sampling and bioassay data - a comparison. Health Phys 1995;69(4):481-486.

Tankersley WG, West CM, Reagan JL, and Watson JE: Retrospective assessment of radiation exposures at or below the minimum detectable level at a federal nuclear reactor facility. Applied Occup. Environ Hyg. 11(4):330-333, 1996.

The memos listed below appear as separate pdf files. Personal identifying information has been removed from these memos to protect confidentiality of the workers.

- Addendum to "Brief History of the Y-12 External Monitoring Program"
  June 15, 1993

- Brief History of the Y-12 External Monitoring Program
  June 7, 1993

- Correction of Y12 Film Badge Results in the 1950 through 1955 Period
  February 19, 1991

- Discrepancy in 1954 Y-12 Film Badge Results
  August 18, 1981