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DATA ANALYSIS FOR SKYLAB PROTON SPECTROMETER

FINAL REPORT

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Prepared for

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FOREWORD

This report is submitted to the George C Marshall Space Flight Center, National Aeronautics and Space Administration, Huntsville, Alabama, in accordance with the requirements of Contract NAS8-31372 The Contracting Officer Representatives are Mr John W Watts (Principal), Dr Tom Parnell (1st Alternate) and Mr R A Gray (2nd Alternate)

John Watts, Space Sciences Laboratory, has made large contributions to this report His efforts in securing the data, finding and correcting data processing software errors, reprocessing the data tapes, providing calibrations, and day-to-day assisting in data analysis are greatly appreciated

ABSTRACT

This report examines the data from a proton spectrometer flown aboard Skylab The instrument is sensitive to protons in the energy range 18 to 400 MeV A partial failure at the start of the mission was traced to probable failure of the optical coupling between the CsI crystal and the photomultiplier The loss of all proton counts after several weeks was due to the same cause combined with low temperatures

The partial failure restricted spectral analysis to two energy bands, 18 to 27 MeV and 27 to 400 MeV The directional data showed that a Gaussian angular distribution parameter of at least 70° is required for the low energy band and at least 40° for the high energy band The data, integrated over angle, indicate that the AP3 model extrapolated down to 18-27 MeV is high by factors of 2 to 5 over most of the B-L space mapped In the 27 to 400 MeV range, the AP3 model is 20 to 100 percent low at low and high values of L, and is high at medium L values in the B-L space mapped

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1 0 INTRODUCTION

A proton spectrometer, sponsored by the Space Sciences Laboratory, George C Marshall Space Flight Center, NASA, was placed aboard the Skylab vehicle The Principal Investigator was Dr Godehart Guenther, University of Alabama in Huntsville This report presents an analysis of the data obtained during the first dozen days of the mission

Proton radiation fluxes were sampled four or five times per day as the Skylab cluster penetrated the South Atlantic anomaly The orbit altitude was 450 km at 50 degree inclination

The proton spectrometer has been described in other articles [1,2] A brief description is given here for familiarization purposes

The spectrometer is designed to discriminate against a large electron background A collimator and detector telescope arrangement limit the acceptance cone to a 22 5 degree half angle as shown in Figure 1 Protons enter the instrument through an outer shield, S1, which reduces the low energy electron flux D1 and D2 are solid state detectors with a 10 nanosecond coincidence requirement These detectors define the acceptance cone and help ensure that single particles are being examined In addition, an energy threshold requirement of 400 KeV is imposed on D2 to discriminate against electrons

A proton which penetrates D1 and stops in D2 has 18 MeV This is the low energy boundary on the first proton channel A proton which penetrates a second shield, S2, with less than 250 KeV possesses 27 MeV This defines the upper energy boundary of the first proton channel

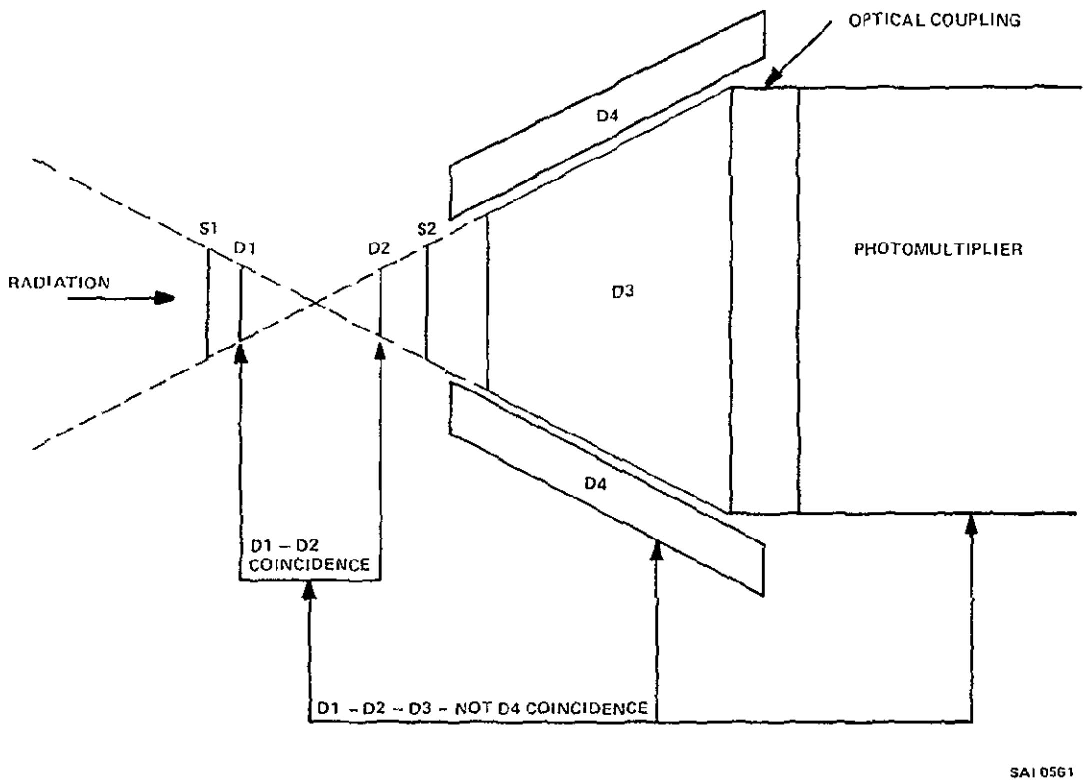

Figure 1   Spectrometer Schematic

Protons with energy greater than 27 MeV will deposit more than the 250 KeV threshold energy in the thallium-activated, cesium iodide detector, D3 Another coincidence between D3 and the two solid state detectors is required Protons between 27 and approximately 150 MeV will be stopped in D3 These protons deposit more than one MeV in D2, thus setting a "high" flag in the logic circuits Protons between 150 and 400 MeV deposit 0 4 to 1 0 MeV in D2 and set a "low" flag in the logic circuits

Light generated in the CsI D3 detector is transmitted to a photomultiplier tube through a light coupling material The amplified signal is sent to an analog-to-digital converter (ADC) which generates a wave train with the number of pulses proportional to the energy deposited Another circuit counts the pulses, examines the "high" "low" flag, and increments the counter in one of seven energy channels (channels 2-8)

Spurious counts and energies entering from the side are discriminated against by requiring an anticoincidence from a plastic guard detector, D4

Details of other special features such as an accidental coincidence counter are available in previous reports[1,2]

2 0 FLIGHT HISTORY

The proton spectrometer suffered a partial failure either during the launch or during the low temperature period after Skylab achieved orbit and before the instrument was turned on The meteoroid/insulation shield around the Workshop ripped off during the powered phase of the launch One of the solar panel wings was also lost The other solar panel wing was jammed until the first Skylab crew managed to free it several weeks later

Fortunately, some power was available from the Apollo Telescope Mount solar panels This power was rigorously conserved by shutting down all nonessential equipment including the proton spectrometer Because the spectrometer is mounted externally on the anti-solar side near the top of the Multiple Docking Adaptor (MDA) and because it is thermally isolated from the MDA structure, the temperature inside the instrument fell to about -40°F

Eventually, two decisions were made which brought the instrument temperature up into its operating range One decision caused the spacecraft to be rolled and tilted in an effort to shade the Workshop by the ATM solar panels The Workshop temperature was climbing to about 120°F at that time This movement brought the instrument into the sunlight The other decision which helped raise the temperature was to activate the instrument because it used only 5 watts with the heaters on The temperature rose to 35 - 40°F Several weeks later after repairs were made and the spacecraft was placed in the solar-inertial mode again, the temperature fell below zero, suggesting that the heaters were undersized or that the insulation was damaged in a manner not apparent to the crew during their fly-around survey

It was difficult to determine the condition of the spectrometer immediately after it was turned on Radiation was encountered during passage through the South Atlantic anomaly and the horns of the outer belt sporadically during the day These data were taped and telemetered to ground stations at intervals The data were placed into a large data base where it could be accessed through the MOPS system After 24 hours the data were moved to permanent storage where access was difficult The spectrometer data were available in several displays and in several formats It was quickly determined that the D4 count rate from the guard scintillator and the D3 total dose from the cesium iodide crystal were behaving as expected Software errors prevented access to detailed data for several days After corrections to the MOPS software were made, a small quantity of data became available which indicated the high energy proton channel contained a suspiciously large number of counts relative to the other channels

Several weeks after mission start, the spacecraft was placed in the solar inertial mode The temperature in the spectrometer fell to $-20^{o}F$, and the proton counts ceased Other spectrometer functions such as D4 count and D3 total dose remained operational

An attempt was made to analyze the early proton data Unfortunately, the programs which had been designed to strip out the spectrometer data from the telemetry contained errors which rendered the formatted data meaningless The software group responsible for those programs had been reassigned to more urgent projects Eventually the programs were corrected By this time a torrent of data was coming in from Skylab, threatening to saturate computer facilities and personnel

A command decision was made to defer all reprocessing requests until after mission completion The data were reprocessed and made available for analysis early in 1975

Initial examination of the data showed that it had not operated properly An informal fault analysis committee was convened by Dr Tom Parnell, Division Chief, Cosmic Ray Physics, Space Sciences Laboratory (SSL), MSFC Other members included Dr Godehart Guenther, Principal Investigator, John Watts, SSL, George Detko, SSL, and Charles Hill, Science Applications, Inc

The fault was isolated to the optical coupling between the D3 cesium iodide crystal and the photomultiplier tube This optical coupling is a transparent, rubber-like gel which seals the two interfaces with the aid of a slight mechanical compression The compression was adjusted to give an operating range of 10 to 90°F It is probable that part of the seal was affected by the vibration of launch and/or by the cold soak suffered by the spectrometer

Loss of part of the seal lowers the effective gain of the instrument by reducing the amount of light going to the photomultiplier tube The flaw is intermittent in nature, as evidenced by the behavior of the self-calibration mode

The self-calibration feature is based on an Americium source embedded in the D3 cesium iodide crystal Normally, the signal from this source is below the threshold set on the counting train (ADC) During self-calibration, the gain is increased to such an extent that counts enter channels 2 and 3 Counts are accumulated until either channel 2 or 3 overflows at 1024 counts If the other channel is below a predetermined value, the gain is stepped up or down towards the balance point The process is then repeated A total of 16 gain steps are available covering approximately 30 percent total gain change

During operation the gain changes would often be stable for a period of time, then change rapidly over a five minute interval The non-overflowing channel would fall from over 900 counts to very low values, usually about 100 but sometimes down to 5 The allowable gain change could not compensate for the intermittent loss of gain probably caused by defects in the optical interface Restoral of gain often took place within 5 minutes After several weeks, the count rate fell to zero

An effort has been made to salvage usable data from the proton spectrometer Recalibration was not possible due to the fluctuating nature of the defect Eventually a two-band analysis was chosen because more detailed spectral analysis was impossible

Thw low band energy range is 18 to 27 MeV Protons in this range may penetrate the first absorber and the D1 and D2 solid state detectors which define the acceptance angle, but are stopped in the second absorber before reaching the D3 crystal The high energy band range is approximately 27 to 400 MeV These protons stop in or completely penetrate the D3 crystal

The low energy band is not significantly affected by the defect because the D3 crystal is not involved The low energy end of the high band is slightly affected The spectrometer is designed so that 27 MeV protons entering the acceptance cone will deposit about 250 KeV in D3 A threshold discriminator is set to reject signals below 250 KeV The gain loss during fluctuations is estimated to be about 50 percent Thus the lower limit may be approximately 27 25 rather than 27 0 MeV This shift is comparable to fuzziness due to non-uniformity of absorbers and variation of absorber thickness due to angle of incidence The high energy end may be shifted somewhat more, perhaps 10 MeV This shift is comparable to other uncertainties such as the angle of incidence effect Also, the environment contains relatively few protons near 400 MeV

For the above reasons, the nominal energy limits of the upper band are unchanged Unfortunately, it is impossible to unscramble the 7 energy channels in the upper band so they are simply added together in this study

3 0 ANALYSIS

The proton spectrometer is a directional instrument The proton flux is anisotropic with very small intensity parallel to the magnetic field lines and maximum intensity perpendicular to the field lines Therefore, the analysis requires the altitude, latitude, and longitude of the Skylab cluster at the time of a measurement, the pointing direction of the spectrometer, and the direction of the field lines

The experimental data is compared to the Vette AP3 proton environment model[3] for omnidirectional flux above 30 MeV A computer program finds the AP3 model omnidirectional flux, applies a range of assumed pitch angle distributions to the flux model, folds in instrument response, and computes the values which would be seen by an idealized proton spectrometer immersed in the AP3 model environment

The direction cosines of the spectrometer pointing vector are (0,-1,0) in the MDA coordinate system This direction is related to a system rotating with the earth through the application of 6 rotation transformations

$$\begin{pmatrix} PS1 \\ PS2 \\ PS3 \end{pmatrix} = F\ E\ D\ C\ B\ A \begin{pmatrix} 0 \\ -1 \\ 0 \end{pmatrix}$$

Here (PS1, PS2, PS3) are the desired direction cosines of the proton spectrometer axis in the rotating earth coordinate system at the time of the measurement

Transformation A relates the MDA system to the OWS system, accounting for bending at the flexible Airlock-OWS coupling The transformation is derived from Skybet tape Euler angles (E1, E2, E3) The result of the first transformation is as follows

PSOWS1 = Cos E1 cos E2 sin E3 - Sin E1 Sin E2

PSOWS2 = -Cos E1 cos E3

PSOWS3 = -Cos E1 sin E2 sin E3 - sin E1 cos E2

Matrix B transforms from the OWS system to the ECI (Earth Centered Inertial, of date 1950 0) system The Z-axis of the ECI system points along the north pole of the spin vector The X-axis is toward the vernal equinox In terms of the SKYBET-furnished Euler angles, (U1, U2, U3), the B matrix is as follows Note that CU1 = cos U1 and SU1 = sin U1, etc

$$B=\begin{pmatrix} \text{CU3 CU2} & \text{-CU1 SU3 CU2+SU1 SU2} & \text{+SU1 SU3 CU2+CU1 SU2} \\ \text{+SU3} & \text{CU1 CU3} & \text{-SU1 CU3} \\ \text{-CU3 SU2} & \text{CU1 SU3 SU2+SU1 CU2} & \text{-SU1 SU3 SU2+CU1 CU2} \end{pmatrix}$$

Matrix C transforms a column vector in ECI (epoch 1950) to ECI (epoch 1973) coordinates It is a precession correction Matrix C is furnished by the Dudley Observatory, Albany, New York It was checked against Transformation 33, pp 418-419, of Methods of Orbit Determination, Escobal, John Wiley & Sons, Inc , New York, 1965, and found identical to within two units in the seventh place after the decimal

$$C=\begin{pmatrix} 99998\ 42912 & -\ 00514\ 04016 & -\ 00223\ 46372 \\ 00514\ 04016 & 99998\ 67880 & -\ 00000\ 57437 \\ 00223\ 46372 & -\ 00000\ 57433 & 99999\ 75032 \end{pmatrix}$$

Matrix D corrects for nutation (wobble) from ECI (epoch 1973) to ECT (Earth Centered True, epoch 1973) This small correction is based on observational data and may be computed only after the fact Matrix D is furnished by the Dudley Observatory

$$D=\begin{pmatrix} 99999\ 99968 & -\ 00007\ 37907 & -\ 00003\ 19975 \\ 00007\ 37903 & 99999\ 99972 & -\ 00001\ 09138 \\ 00003\ ,19983 & 00001\ 09114 & 99999\ 99994 \end{pmatrix}$$

Matrix E rotates the ECT coordinate system around the Z-axis so that the X-axix is moved from the vernal equinox to the Greenwich meridian

$$E= \begin{pmatrix} \cos \theta & \sin \theta & 0 \\ -\sin \theta & \cos \theta & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$\theta = 99\ 6909833 + 36000\ 7689 \quad TU + \ 00038708 \quad TU^2$$

TU = elapsed time in Julian centuries, or

$$TU = (2441682\ 5 - 2415020\ )/36525$$

A half day has been subtracted to change from Greenwich noon, Jan 0, 1950, to 0 hr, 0 min, Jan 0, 1973

Matrix F corrects from ECT (1973 0) to the time of measurement

$$F= \begin{pmatrix} \cos wt & \sin wt & 0 \\ -\sin wt & \cos wt & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

t = time since 0 hr , 0 min , Jan 0, 1973

w = 26251 61453 radians/hr

The six rotations shown above convert the PS axis from the local MDA system to the rotating earth system

The counts in proton channels P1-P8 are screened for validity Total counts fewer than 5 distributed among the 8 channels during a 1 2 second period are discarded Counts greater than 50 in a single channel indicate a probable error and that period is discarded The counts are normalized to counts per second and dead time corrections are applied These calculations are made at each measurement point, i e , every 1 2 seconds along the trajectory where sensible flux is encountered The measured values and calculated values are summed over time, then ratiod to provide spectral correction factors

At the same time, the data are tabulated according to location (B, L), pitch angle (α), energy, assumed pitch angle distribution (σ), and orientation in the earth-fixed coordinate system (θ_{LV}, ψ_{LV}) With the aid of this data, detailed corrections to the AP3 model environment are derived "Best fit" energy-dependent pitch angle distributions are also obtained Finally, some information is derived concerning the east-west asymmetry, though this effect is blurred at higher energies due to acceptance in the backward cone of the PS above 100 - 150 MeV

The Vette AP3 flux parameters, a and b, are found by table look-up using values of B and L from the SKYBET tape

$$\text{AP3 FLUX } (>E) = aE^{-b}$$

This form is differentiated, and the resultant is integrated over energy ranges corresponding to those of the eight proton channels The angle α between the local magnetic field line, B, and the axis of the PS primary cone is found using the scalar product The angle α is used in a table look-up to determine that fraction of the AP3 omnidirectional flux which would be observed by an ideal PS The measured angular response of the instrument is triangular, peaked on the axis and going to zero at $\pm$ 22 5° The assumed pitch angle distribution is Gaussian

$$\frac{e^{\frac{-(90-\alpha)^2}{2\sigma^2}}}{\sigma\sqrt{2\pi}}$$

The idealized instrument reading is obtained by numerical integration and condensed into tables for this program Note that σ determines the angular distribution of the flux A set of 10 values are chosen for σ so that parallel calculations may be made

The flux values computed above will be denoted by Φ^* Each quantity will be further identified by two sets of subscripts

The first set of subscripts is described as follows

$$\Phi^*_{ijkl} \text{ , } \Phi_{ijklm}$$

where

i = B' (note prime)
j = L' (note prime)
k = α
l = E
m = σ

Figure 2 shows that rectangular boxes in B - L coordinates would be wasteful of computer storage, or would have large variations in flux level within a box Therefore, a transformation is applied to obtain B'-L' coordinates which are better suited here

$$\begin{pmatrix} B' \\ L' \end{pmatrix} = \begin{pmatrix} \cos\theta & -\sin\theta \\ \sin\theta & \cos\theta \end{pmatrix} \begin{pmatrix} B \\ L \end{pmatrix} + \begin{pmatrix} -\ 1348 & 0423 \\ -\ 1\ 1589 & 3780 \end{pmatrix}$$

$0 = -3^{\circ}5'10''$

The B' box limits are 0- 005, 005- 01, 01- 02, and > 02 The L' box limits go from 0 to 7 in steps of 1, then > 7

The box limits in the α dimension are 0 - 30, then 10 degree steps to 90 degrees Angles greater than 90° are reflected back to the first quadrant

The box limits in the energy dimension are 18-27, 27-400, and 18-400 MeV

The calculated fluxes, Φ, have an extra dimension, pitch angle distribution σ, and 10 parallel calculations are made for this quantity The assumed pitch angles parameters are 5, 10, 15, 20, 25, 30, 40, 50, 60 and 70 degrees

A second set of subscripts and tables is necessary for the east-west asymmetry study These subscripts are

$$\Phi^*_{ijln1n2} \quad , \quad \Phi^*_{ijlmn1n2}$$

where

$i = B'$ $\quad\quad m = \sigma$

$j = L'$ $\quad\quad n1 = \theta_{LV}$

$l = E$ $\quad\quad n2 = \psi_{LV}$

The σ subscript, k, is replaced by two subscripts, n1 and n2, identifying equal solid angle boxes in the Local Vertical system Here n1 labels the polar angle with boundaries at 0, 60, 90, 120 and 180^o, while n2 labels the azimuthal angle with limits at 330, 30, 90, 150, 210, and 270^o The solid angle is subdivided into 4 x 6 = 24 equal size boxes Here, the measured fluxes, Φ^*, are tabulated in a 5-dimensional table

Values of Φ^*, Φ^*2, Φ and Φ^2 are determined for each measurement (1 2 seconds) and are accumulated in separate tables according to the two sets of subscripts described above Auxiliary tables are compiled to show the number of entries in each box of each table

The tables described above are too lengthy to keep in fast storage Therefore, Φ^*, the 10 Φ's, and the two sets of subscripts are placed in a buffer When the buffer is full, it is dumped into mass storage After the input tape is processed, the values are brought back into fast core and processed The subscripts, maximum value, and quantity represented are listed below

1 8 E m 10σ

j 8 L' n2 6 ψ_{LV}

i 4 B' n1 4 θ_{LV}

The measured and calculated data are sorted into tables as described above Later, the 8 energy channels are collapsed into the 3 energy bands described previously due to the partical spectrometer failure The cumulative tables are stored on tape in the following order

Number of Entries Tables

1 Number of entries per bin for the pitch-angle tables (8 E's, 8 L's, 4 B's, 7 α's = 1792 words)

2 Number of entries per bin for the east-west tables (8 E's, 8 L's, 4 B's, 6 azimuthal angles, 4 polar angles = 6144 words)

Pitch-Angle Tables

3 Measured pitch-angle, Φ^*, 1792 x 2 words (Φ^*, Φ^{*2})

4-13 Calculated pitch-angle for 10 assumed distributions, Φ_m, 10 x 1792 x 2 words (Φ_m, Φ_m^2)

East-West Tables

14 Measured east-west table, Φ^*, 6144 x 2 words

15-24 Calculated east-west tables for 10 assumed distributions, Φ_m, 10 x 6144 x 2 words

The total table storage is 182528 words

Values are accumulated over each pass through the South Atlantic anomaly, then added to previous accumulations Within each box, the summed values are

$$T = \Sigma\Phi^* \qquad S = \Sigma\Phi$$

$$T2 = \Sigma\Phi^{*2} \qquad S2 = \Sigma\Phi^2$$

The mean value of the measured flux within a box is T/n, where n is the number of entries in that box A standard deviation is defined herein (incorrectly) to be identical with the root mean square deviation The reason for this simplification is to reduce the alternate computations required when n = 1

$$(S\ D\ )^2 = \frac{1}{n} \ \Sigma(\Phi^* - \overline{\Phi^*})^2$$

$$= \frac{1}{n} \ \Sigma(\Phi^{*2} - \overline{\Phi^*}^2)$$

$$= \frac{1}{n} \ T2 - \frac{1}{n\ n} \ (T)^2$$

Thus

$(S\ D\ ) = \sqrt{nT2 - T^2}\ /n$ and the fractional (S D)

is $(F\ S\ D\ ) = \sqrt{nT2 - T^2}\ /T$

for the measured flux within a box Similar expressions may be derived for the model fluxes

Flux units are $\frac{p(E > 50 \text{ MeV})}{cm^2 - sec}$

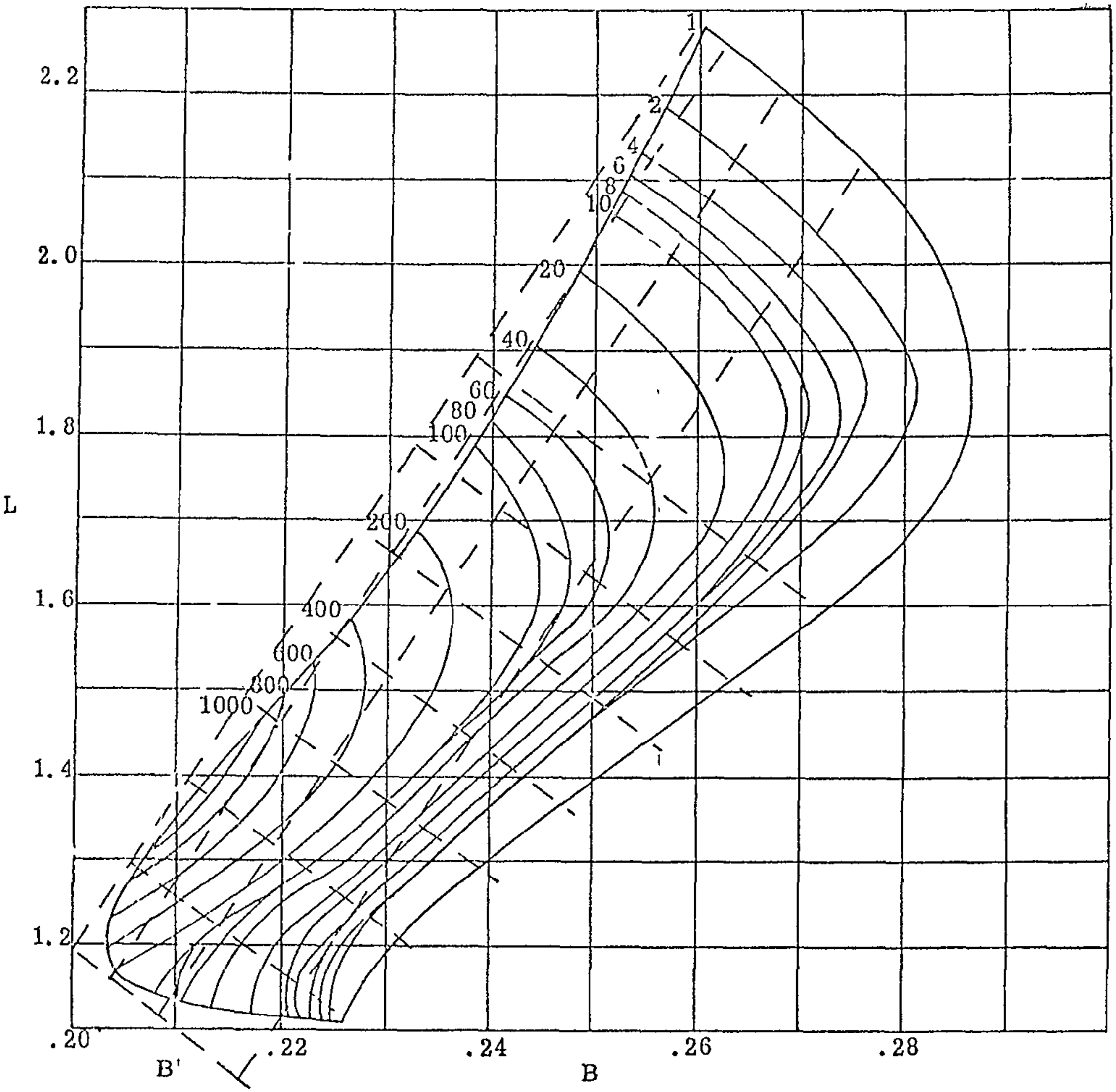

Figure 2 Flux Contour Map of the Skylab Orbit in B - L Space
235 n. m. - 50°, AP7(3)

4 RESULTS

The results of the analysis are shown in Tables A1, A2, and A3 Table A1 gives the ratio, R, of the measured flux to the model flux within each B', L', α (I,J,K) box Table A2 shows similar ratios after weighted summing over the pitch angle, α Table A3 shows the ratio of measured to model flux coming from the east hemisphere and the west hemisphere within each B', L' box

Within each table, data are presented for 3 energy groups, 18-27, 27-400, and 18-400 MeV The measured fluxes are compared to the AP3 model fluxes[3] which are intended for use above 30 MeV Therefore, attention should be focused upon the center band (27-400 MeV) An attempt was made to use the newer AP7 proton environment model[3] (valid above 50 MeV), but this model does not extrapolate well down to 27 MeV It may be noted that the AP3 and AP7 spectra, integrated over the entire orbit, are nearly identical above 50 MeV for the Skylab trajectory

The data are taken from 3280 samples of 1 2 seconds each, or about 66 minutes of active measurement This data represents less than 2 percent of the data sought Of the 224 B', L', α boxes, 81 contain samples, averaging 40 samples per box

Table A1 contains 10 sets of ratios The first, labeled "M=1", assumes a 5 degree parameter in the AP3 angular distribution model This parameter increments by 5 degrees to 30, then 10 degrees to 70 The first set uses a flux model sharply peaked near the perpendicular to the magnetic field line This model predicts counts only when α is near 90 degrees, K=5, 6, or 7 The ratio, R, of measured to model counts is often large for the K=5 boxes, which indicates the model counts are too small   The zero values of R indicate that the ratios are so large that certain program constraints are exceeded   The values labeled "FSDI" are fractional standard deviations (fsd) for the model counts   The values labeled "PFSDI" are fsd's for the measured counts within a box

Consider the 27-400 MeV results for M=1 ($\sigma=5^{\circ}$)   The model flux angular distribution is obviously too narrow   The ratio R is nearly reasonable only for K=7 and 6 where the spectrometer sees the maximum flux   The R values range from 0 286 to 1 267 for K=7   For K=5 (20-30° from the $\perp$) the model counts become too small and the ratio too large (11 to 953)

At M=5 ($\sigma=25^{\circ}$), the number of zero ratios is 11 compared to 33 at M=1   Most of the other ratios lie between 0 5 and 3   A few are still large, particularly for K=2 ($30^{\circ} < \alpha < 40^{\circ}$), where R lies between 2 2 and 23 2   It is evident that the real flux is again more smeared than the model flux

At M=6 ($\sigma=30^{\circ}$), the number of zero ratios is 6 and 7 values of R are greater than 6 0   Most of the large or zero (very large) values of R are for observations within 30 degrees of the field line   The model is still predicting fluxes much smaller than those observed

At M=7 ($\sigma=40^{\circ}$), the number of zero ratios in the 27 to 400 MeV range is one and only 3 values of R are larger than 3 0   The zero ratio box contains 2 samples   The ratios larger than 3 0 contain 5, 6, and 15 samples

This group of data shows some degree of consistency between the experimental and model data   The assumed model data is smeared enough ($\sigma=40^{\circ}$) to simulate experimental measurements

Smaller values of σ cause large values of R at small pitch angle as shown in Figures 3, 4, and 5   Figure 3 is a

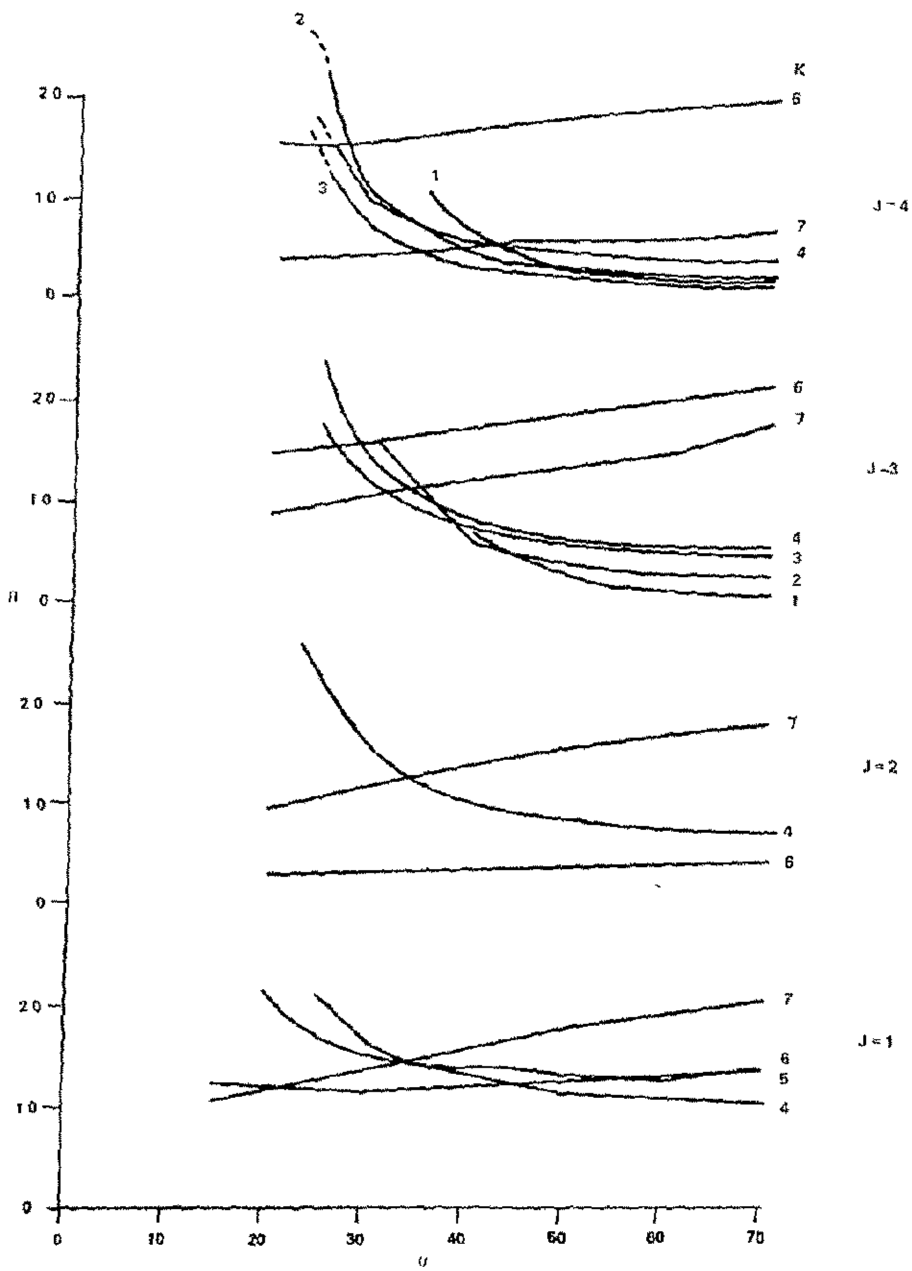

Figure 3   R versus σ, 27-400 MeV 0<B'< 005

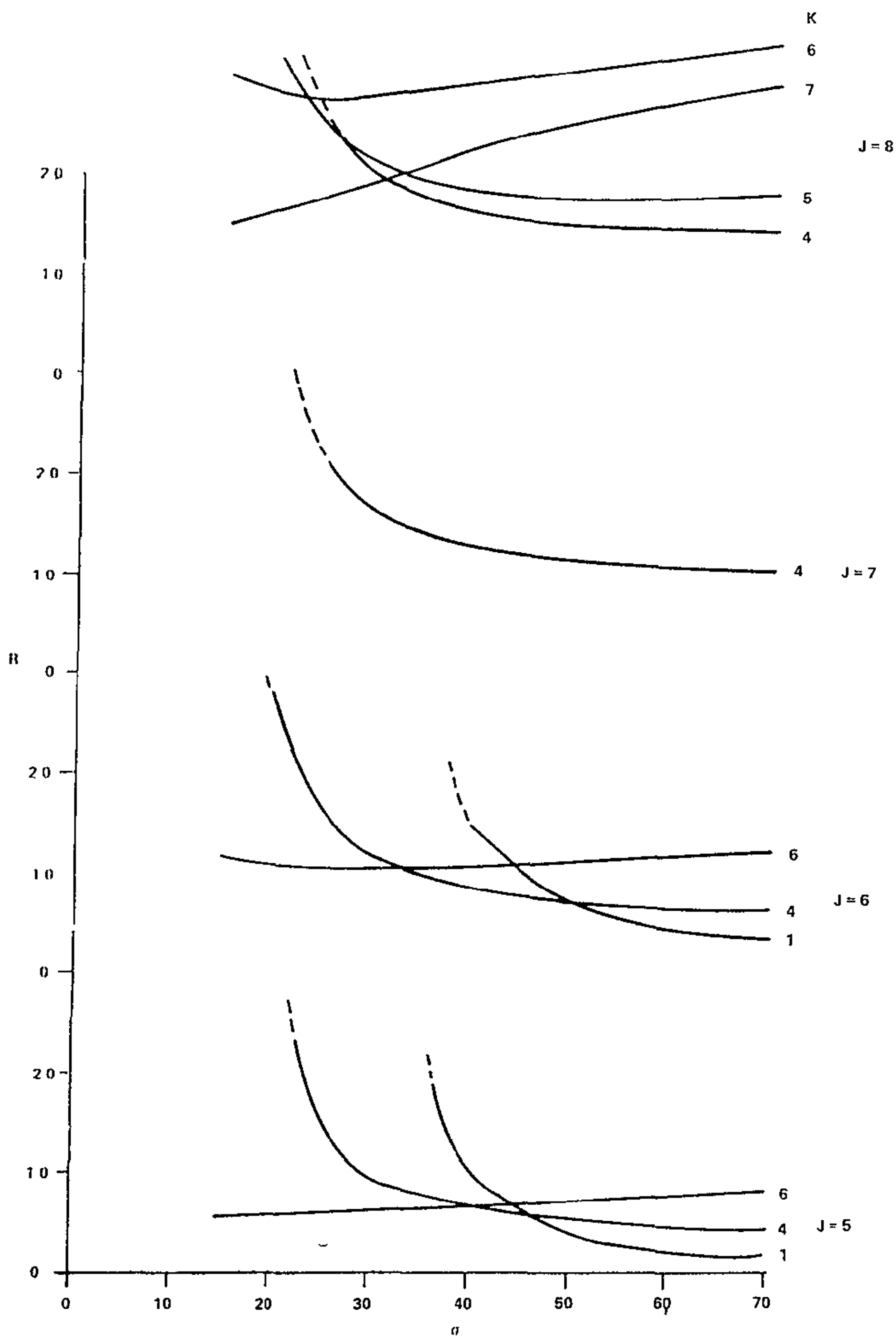

Figure 3. Continued

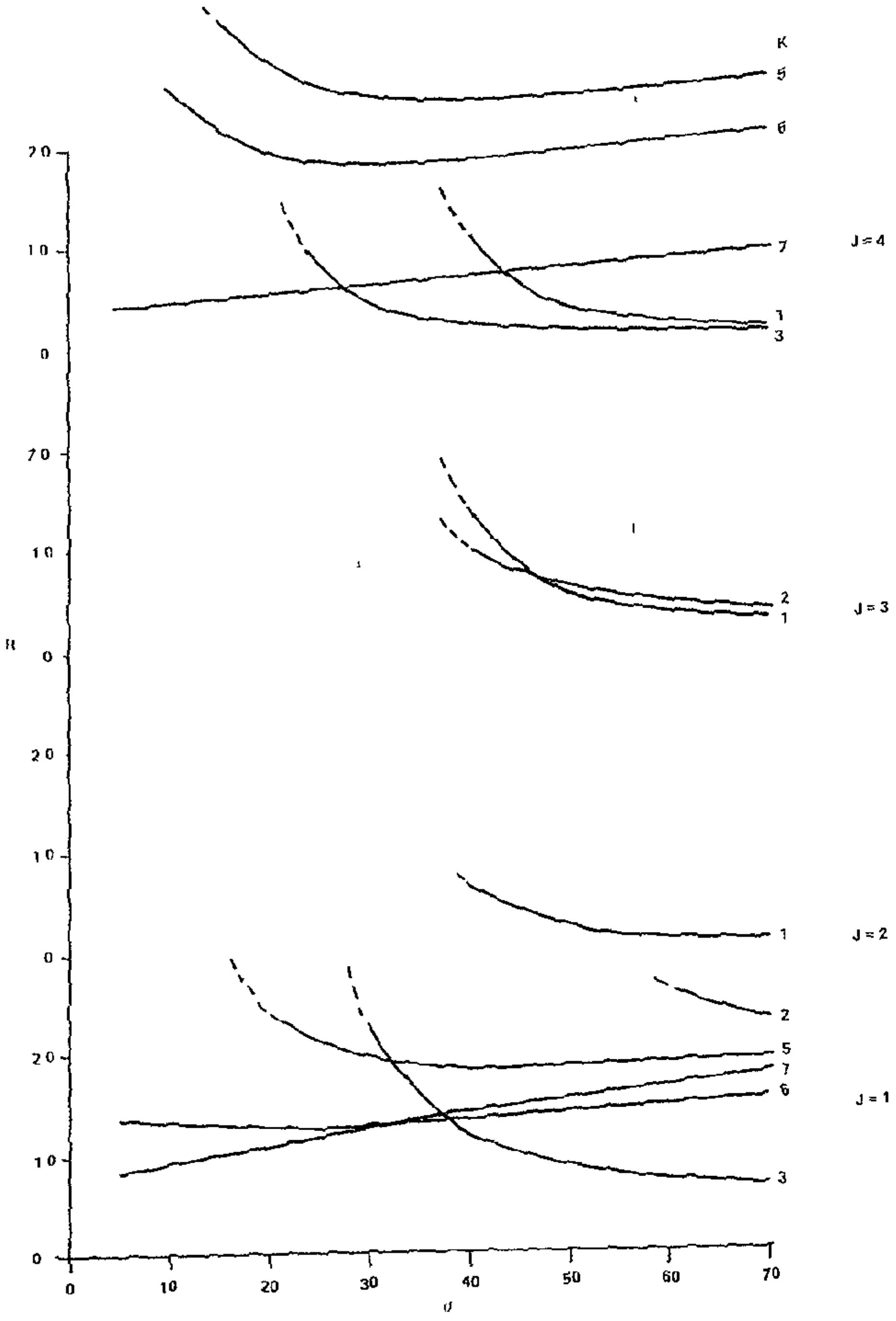

Figure 4 R versus σ, 27-400 MeV 005<B'< 01

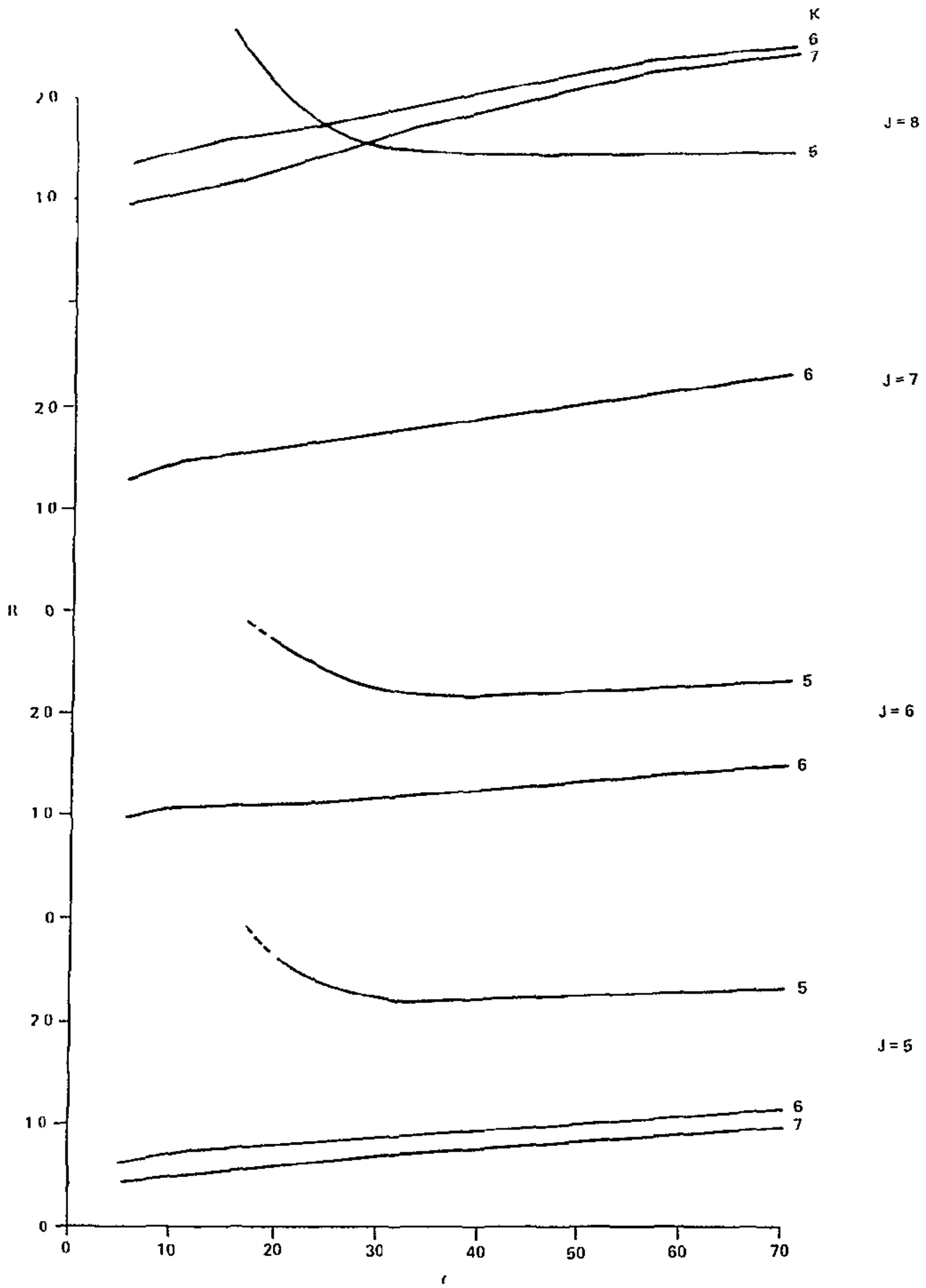

Figure 4 Continued

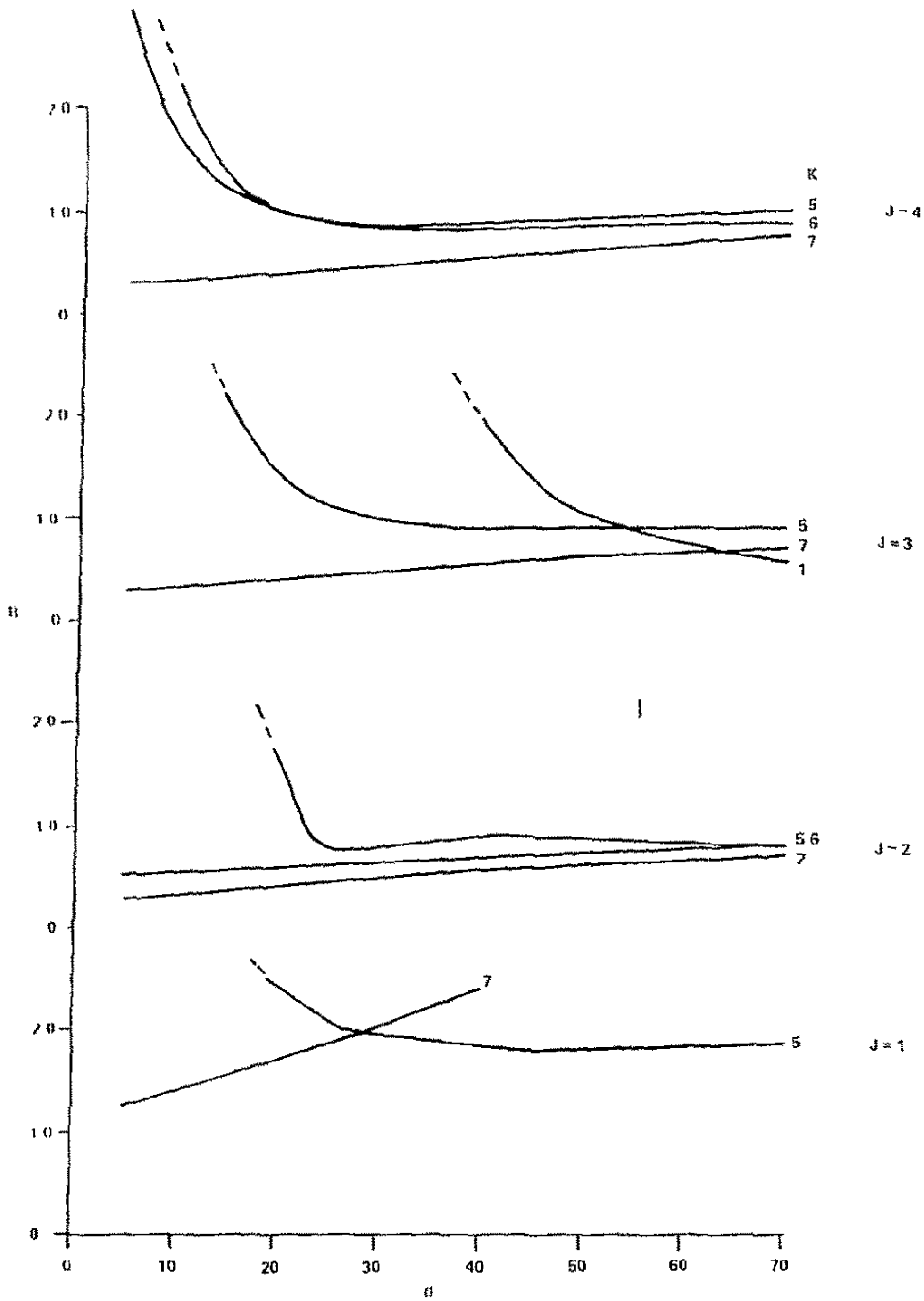

Figure 5   R versus σ, 27-400 MeV   01< B'< 02

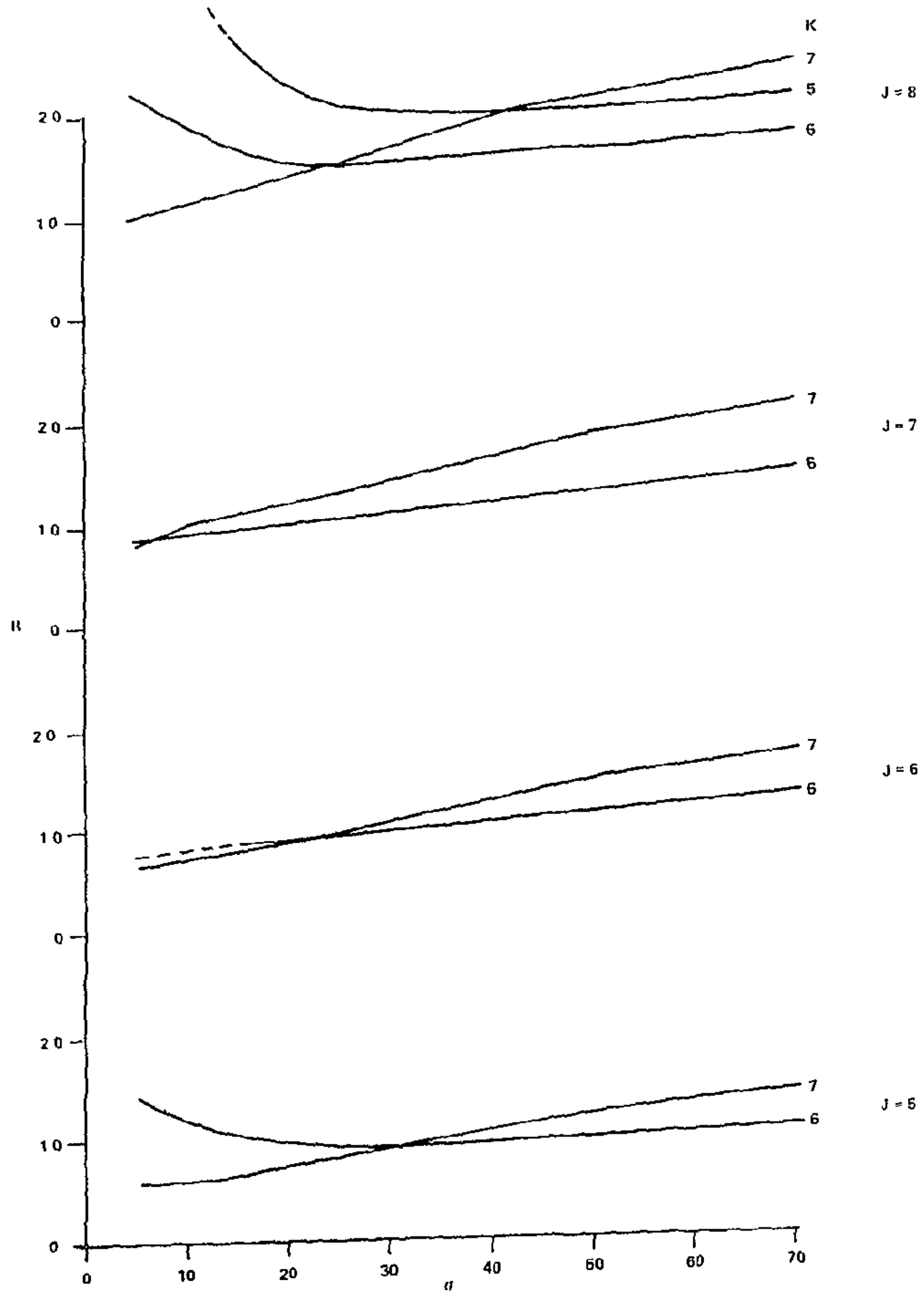

Figure 5 Continued

plot of R, the measured flux divided by the model flux, versus σ for I=1 (0<B'< 005) Figures 4 and 5 are for I=2 (005<B'< 01) and I=3 (01<B'< 02) Eight plots are shown in the figure, one for each L' band labeled J=1-8 These I, J bands may be correlated with the dashed boxes of Figure 2, which was constructed with the AP7 model rather than the AP3 model used herein Within each plot the curves are labeled by the index K A value of K equal to 1 identifies measurements taken when the spectrometer view axis is within 30 degrees of the field line, either parallel or antiparallel K=2 corresponds to 30° to 40° look angles, etc , up to K=7 where the look angle is within 10° of perpendicularity and maximum count rates should occur

The K=7 curves increase monotonically with σ because the model flux (denominator of R) is decreasing The K=6 curves exhibit similar behavior for large σ, but may show a slight rise at small σ For K=1 to 5, the value of R is very large at small values of σ because the model flux is small at these angles

The curves of Figures 3, 4, and 5 show that σ should be at least 40° to 50° in the 27 to 400 MeV range in order for the model flux to simulate the measurements at small angles to the field lines

Figures 6-8 show similar curves for the low energy group, 18 to 27 MeV The absolute values of the ratio, R, are less significant because the AP3 model is not valid down to 18 MeV However, the relative magnitudes of the K=1, 2 versus K=7 curves show that a σ value of 70° or larger is necessary to permit the model flux to simulate the measurements in the low energy range

The angular distribution of the trapped protons should be energy dependent at 235 nautical miles altitude, because of the scavenging effect of the atmosphere Higher energy protons must have a smaller value of σ in the SA anomaly as

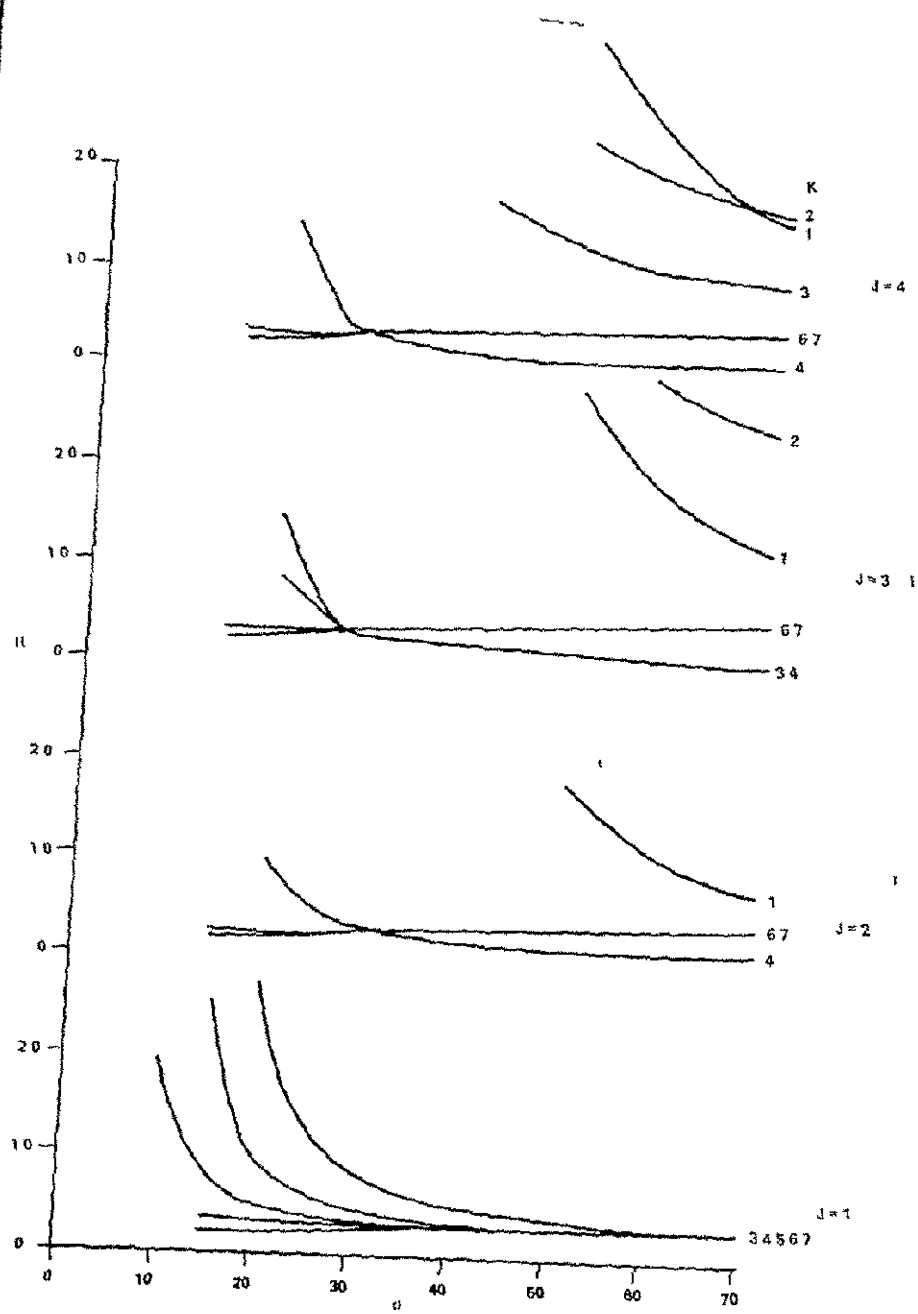

Figure 6 R versus σ, 18-27 MeV 0<B'< 005

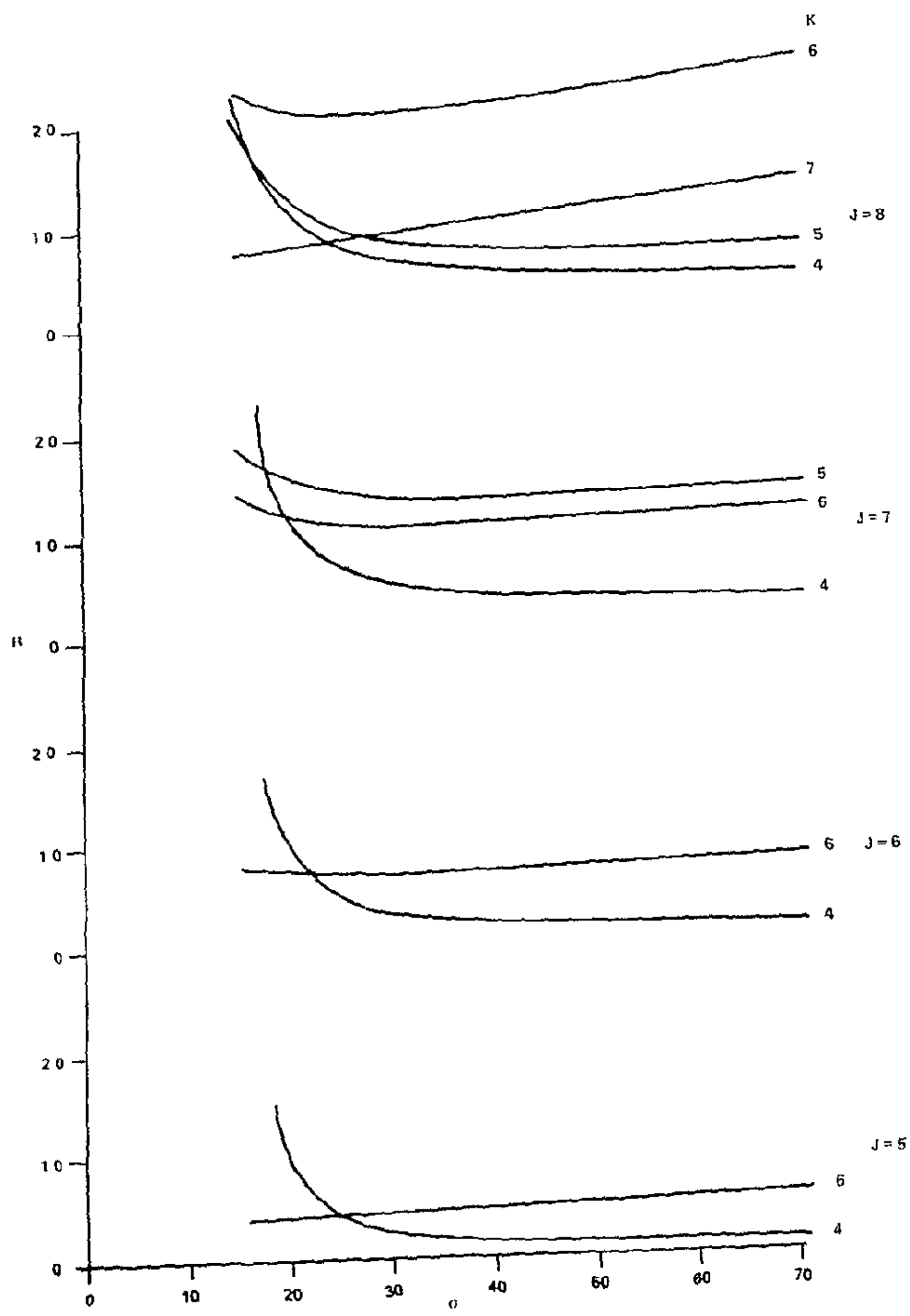

Figure 6 Continued

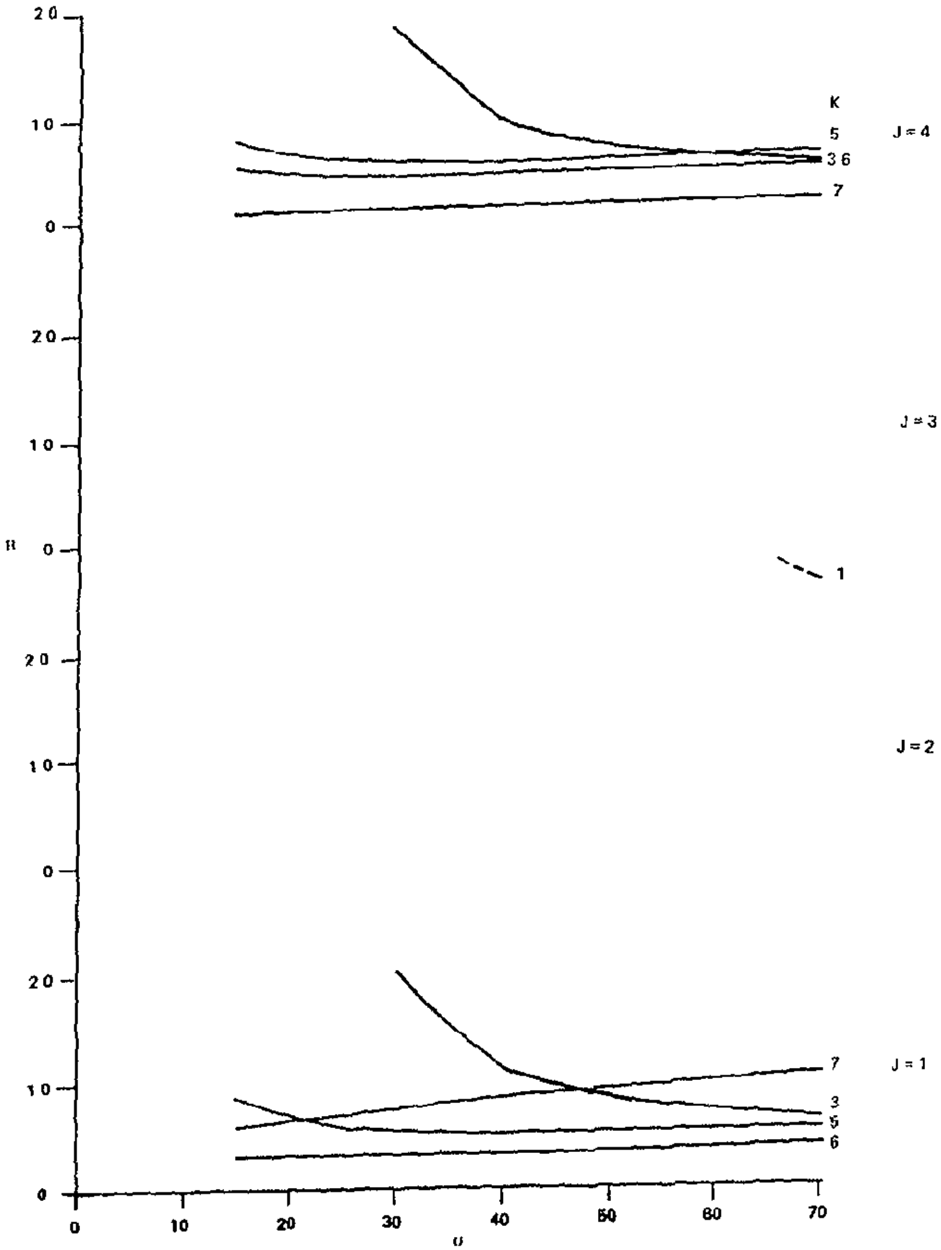

Figure 7 R versus σ, 18-27 MeV 005 <B'< 01

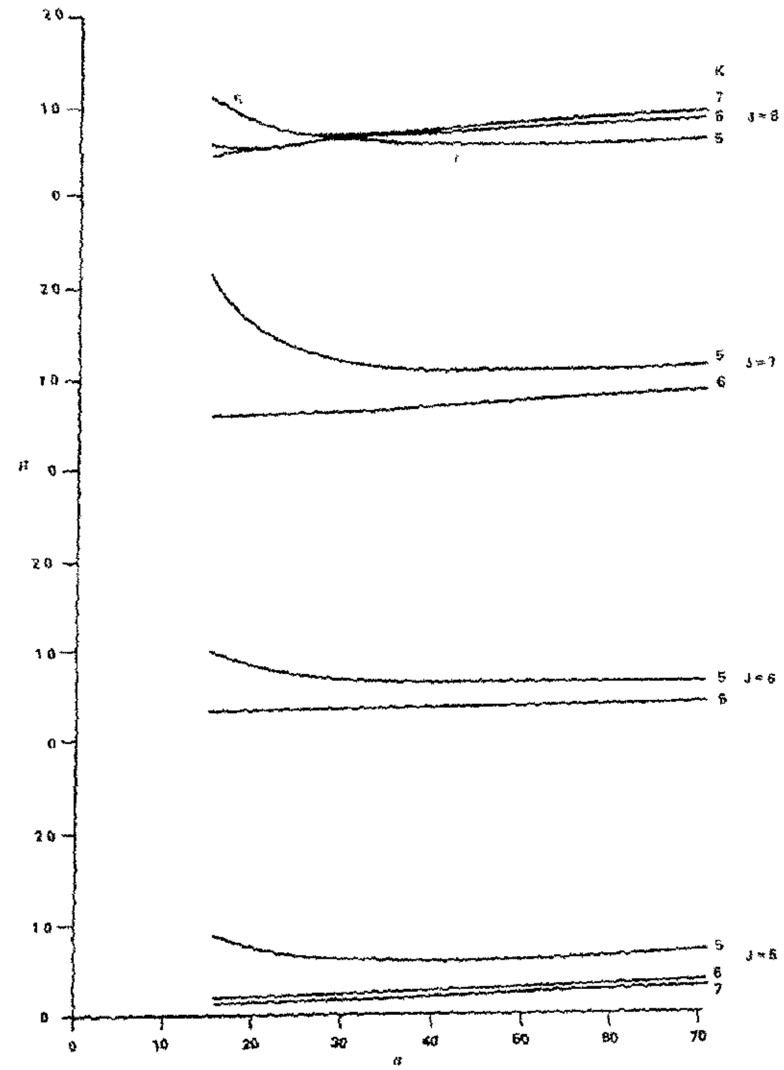

Figure 7   Continued

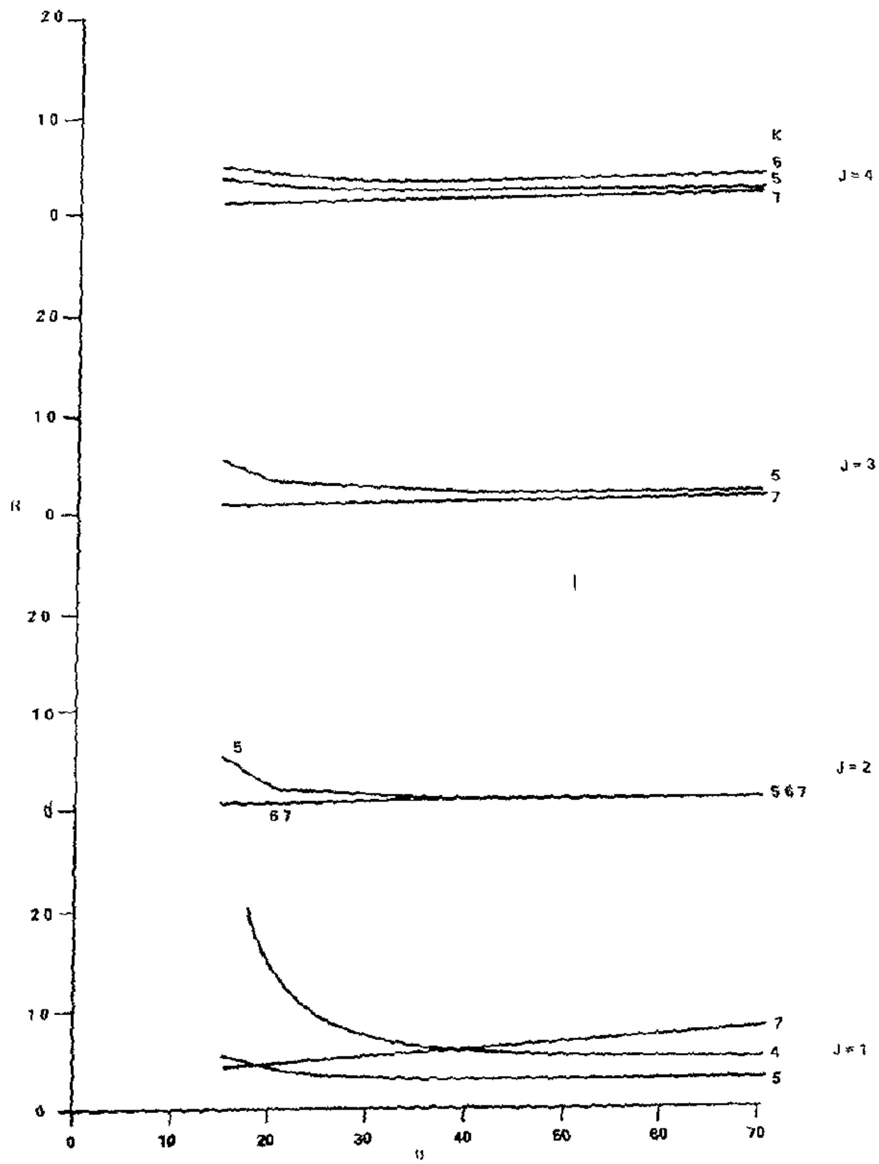

Figure 8 R versus σ, 18-27 MeV 01<B'< 02

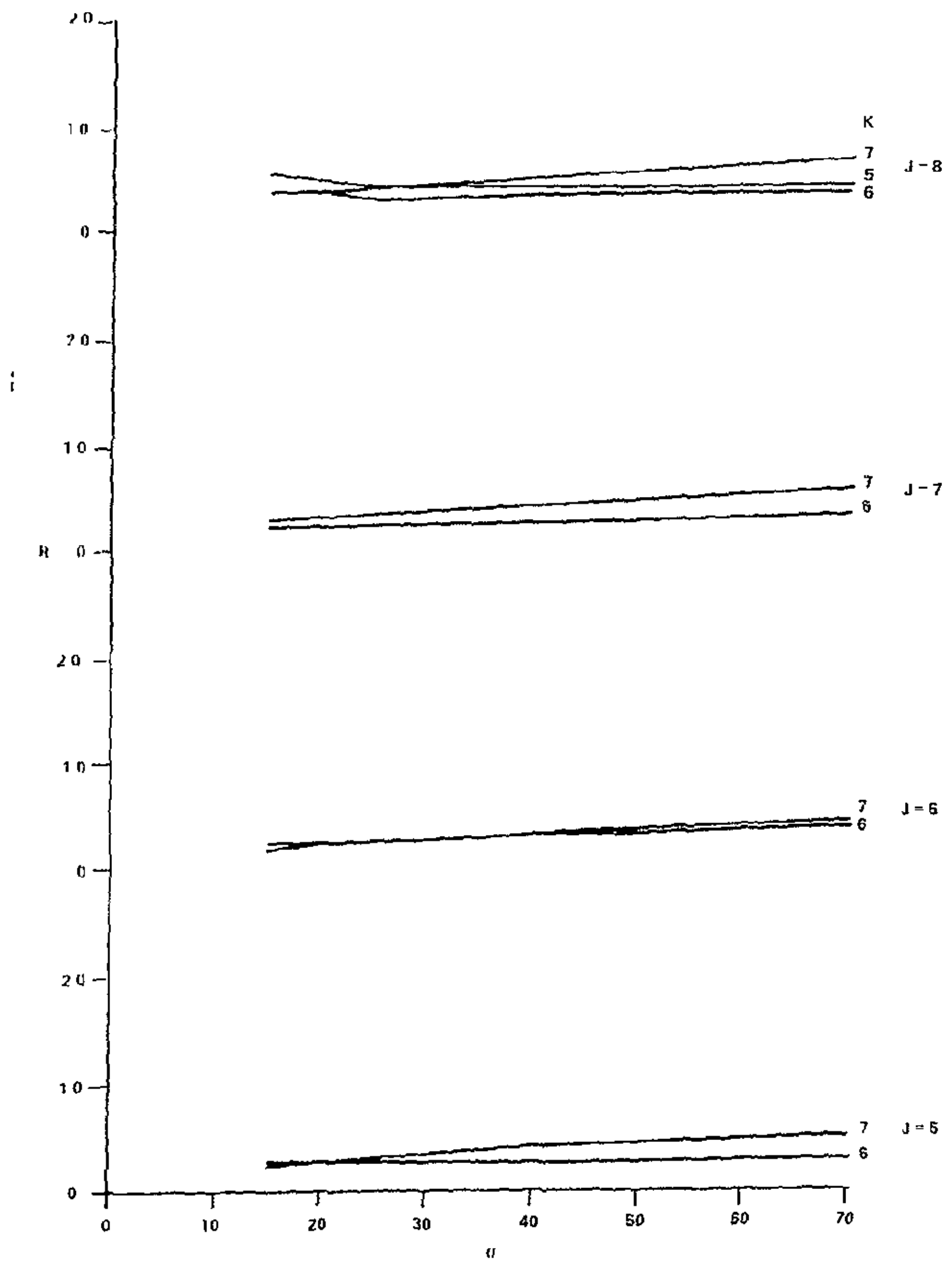

Figure 8   Continued

they approach their mirror point than the lower energy protons possess

It is unfortunate that the loss of spectral information prevents a better study of pitch angle versus energy

Within each B', L' box, the ratio of experimental to model counts has been summed over pitch angle, using weights determined from model fsd's The results are presented in Figures 9-11 Figure 9 is for the lower B' values, Figure 10 is for the middle B' values, and Figure 11 is for the higher B' values observed The top graph in each figure pertains to the 18-27 MeV band, the bottom graph, to the 27-400 MeV band Each curve is labeled by its L' band

These figures must be interpreted carefully because some pitch angle bands are empty Dashed lines indicate that some ratios have exceeded program constraints

The low energy curves of Figures 9-11 are systematically small except for the top 3 L' bands for lowest B' At large values of σ, the AP3 model-extrapolated down to 18 MeV-generally predicts more counts than the experiment measures by a factor of 2 to 5 The top three curves of Figure 9 show good agreement between experiment and the model in this region

The high energy curves of Figures 9-11 should be interpreted at values of σ between 40° and 60° The curves are probably most valid for the low portion of the 27 to 400 MeV energy range where most of the flux exists The ratio of measured to model counts is large for L' bands 1, 7, and 8 The ratio is smaller for L' bands 2, 3, and 4 It would appear that the model fluxes are too low near the top and bottom of Figure 2

The east-west asymmetry data of Table A-3 are not amenable to analysis because of insufficient data

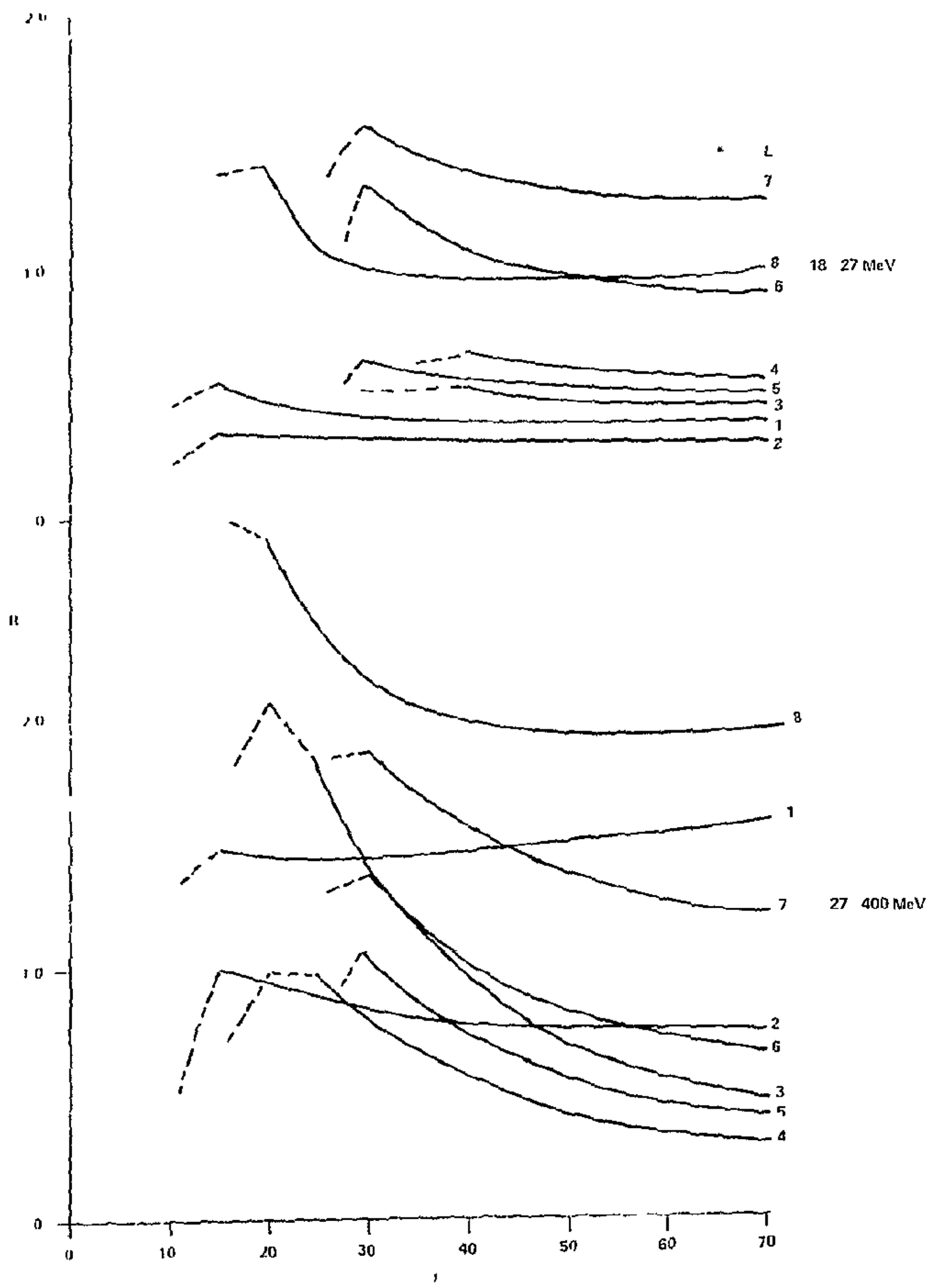

Figure 9 R (summed over Pitch Angle) versus σ
0<B'< 005

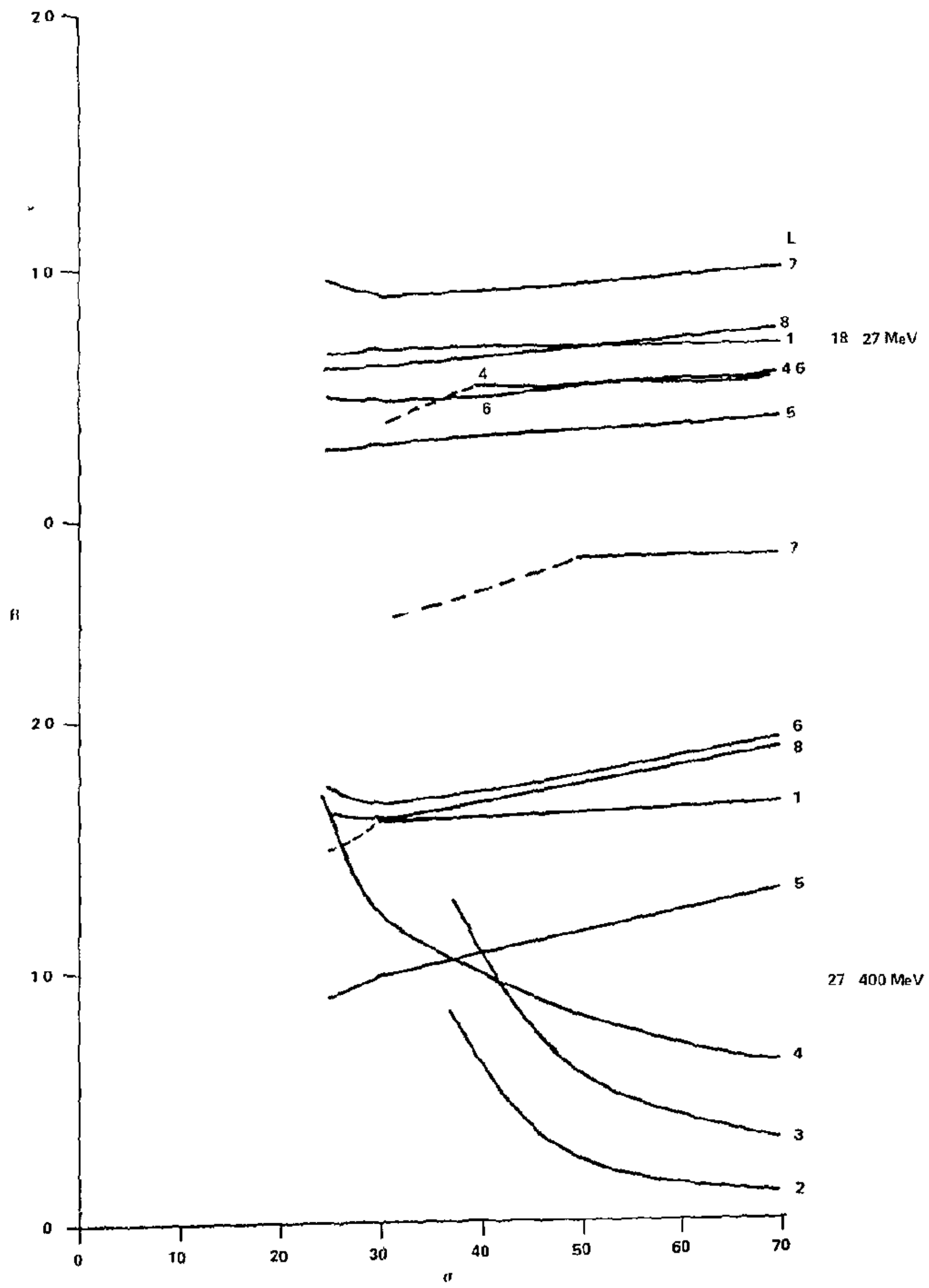

Figure 10   R (summed over pitch angle) versus σ
005<B'< 01

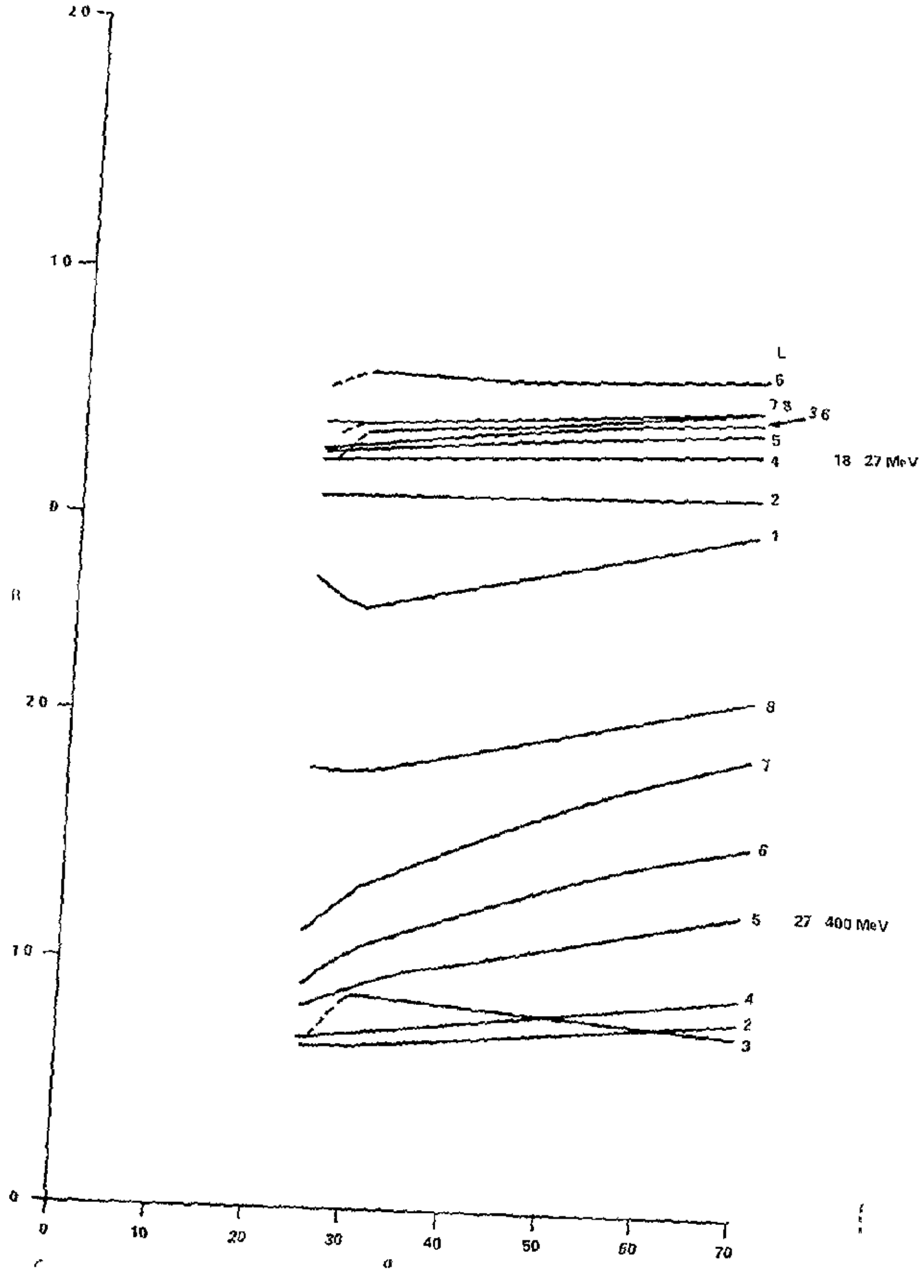

Figure 11 R (summed over pitch angle) versus α
01<B'< 02

5 REFERENCES

1 Operations Handbook for the Proton Spectrometer, NASA Contract NAS8-26215, Document #CD105070-3, Spacetac, Inc, May 17, 1971

2. Gary R Streeter, G A Guenther, A Digital Closed Loop Calibration System for Space-Borne Particle Spectrometers, Proceedings of IEEE, Vol NS16, pp 124-9, 15th Nuclear Science Symposium, San Francisco, October 1969

3 J. I. Vette, et al., Models of the Trapped Radiation Environment, Vols I-VI, NASA SP-3024, 1966-1970

Table A1 Ratio of Measured to Model Counts as a Function of B', L', and α

BIN RATIOS M= 1

I	J	K	NO	R	FSDI	PFSDI	R	FSDI	PFSDI	R	FSDI	PFSDI
1	1	3	7	.00000	.000	.866	.00000	.000	1.296	.00000	.000	.980
1	1	4	87	.00000	.000	.766	.00000	.000	1.021	.00000	.000	.880
1	1	5	126	16.97762	3.110	.855	85.33944	2.999	.696	82.14015	3.170	.592
1	1	6	60	.49750	.675	.956	1.57081	.960	.770	1.53122	1.082	.627
1	1	7	51	.16214	.165	.770	.66658	.163	.178	.71171	.164	.177
1	2	1	1	.00000	.000	.000	.00000	.000	.000	.00000	.000	.000
1	2	4	98	.00000	.000	.471	.00000	.000	.220	.00000	.000	.215
1	2	6	37	.23632	.228	.513	.27795	.229	.494	.72215	.229	.323
1	2	7	134	.17170	.159	.492	.73286	.404	.548	.64442	.470	.500
1	3	1	32	.00000	.000	.341	.00000	.000	.530	.00000	.000	.275
1	3	2	77	.00000	.000	.266	.00000	.000	.353	.00000	.000	.194
1	3	3	44	.00000	.000	.745	.00000	.000	.263	.00000	.000	.252
1	3	4	26	.00000	.000	.865	.00000	.000	.220	.00000	.000	.210
1	3	6	44	.27495	.036	.369	1.17616	.072	.109	.97693	.064	.105
1	3	7	97	.19330	.171	.370	.64954	.587	1.135	.70675	.818	.955
1	4	1	30	.00000	.000	.353	.00000	.000	.397	.00000	.000	.305
1	4	2	18	.00000	.000	.284	.00000	.000	.339	.00000	.000	.237
1	4	3	11	.00000	.000	.494	.00000	.000	.610	.00000	.000	348
1	4	4	63	.00000	000	.796	.00000	.000	.297	.00000	.000	.264
1	4	6	16	.31666	.311	.377	1.46898	.286	.359	1.22210	.349	.350
1	4	7	46	.20493	.011	.398	.28600	.020	.301	.73918	.041	.208
1	5	1	28	.00000	.000	.365	.00000	.000	.484	.00000	.000	.359
1	5	4	49	.00000	.000	1.057	.00000	.000	.264	.00000	.000	.273
1	5	6	14	.33400	.087	.333	.46437	.121	.419	1.15664	.153	.178
1	6	1	29	.00000	.000	.149	.00000	.000	.541	.00000	.000	.150
1	6	4	44	.00000	.000	.593	.00000	.000	.291	.00000	.000	.269
1	6	6	12	1.06844	.322	.356	1.53793	.377	.357	3.09245	.428	.287
1	7	1	4	.00000	.000	.214	.00000	.000	.514	.00000	.000	.186
1	7	4	41	.00000	.000	.595	.00000	.000	.283	.00000	.000	.227
1	7	5	6	10.19955	.271	.266	13.17623	.281	.204	43.35653	.290	.266
1	7	6	10	3.07637	.179	.369	4.08708	.201	.330	9.57178	.221	.302
1	8	4	20	.00000	.000	.577	.00000	.000	.379	.00000	.000	.294
1	8	5	89	316.59642	5.566	.606	953.96806	5.578	.420	517.10471	5.583	.282
1	8	6	14	2.76653	.456	.366	3.60945	.484	.544	3.63829	.464	.131
1	8	7	149	.58440	.419	.400	1.21149	.553	.666	.82896	.471	.470
2	1	2	6	.00000	.000	.000	.00000	.000	1.077	.00000	.000	.769
2	1	3	25	.00000	.000	1.317	.00000	.000	1.247	.00000	.000	1.025
2	1	5	27	9.90238	1.750	1.000	36.15067	1.748	.309	30.68924	1.748	.310
2	1	6	46	.32096	.333	1.402	1.31564	.345	.399	1.11870	.343	.395
2	1	7	7	.46858	.132	.745	.80540	.126	.236	.74146	.127	.158
2	2	1	7	.00000	.000	.222	.00000	.000	.544	.00000	.000	.149
2	3	1	25	.00000	.000	.273	.00000	.000	.682	.00000	.000	.286
2	3	2	57	.00000	.000	.253	.00000	.000	.365	.00000	.000	.206
2	4	1	18	.00000	.000	.765	.00000	.000	.439	.00000	.000	.239
2	4	3	13	.00000	.000	.410	.00000	.000	.298	.00000	.000	.245
2	4	5	4	2.54610	.102	.365	11.02411	.112	.062	8.56820	.109	.081
2	4	6	34	.85947	.378	.419	3.40052	.428	.096	2.72374	.414	.092
2	4	7	6	.08209	.005	.600	.39917	.004	.210	.31132	.002	.191
2	5	5	35	10.04703	.827	.343	33.96453	.855	.161	26.60376	.846	.149
2	5	6	28	.17068	.024	.448	.61196	.077	.195	.46398	.059	.190
2	5	7	18	.11489	.018	.473	.41654	.021	.179	.32818	.009	.155
2	6	5	12	.00000	.000	.399	.00000	.000	.125	.00000	.000	.128
2	6	6	51	.28911	.122	.403	.98089	.186	.190	.70273	.153	.168
2	7	5	15	.00000	.000	.239	.00000	.000	.179	.00000	.000	.122

2	7	6	28	.45363	.039	.421	1.27296	.139	.198	.85894	.089	.180
2	8	5	11	.00000	.000	.464	.00000	.000	.380	.00000	.000	.127
2	8	6	40	.47664	.463	.465	1.31707	.609	.834	.80294	.524	.733
2	8	7	102	.36369	.217	.510	.98238	.338	.505	.61422	.253	.413
3	1	2	2	.00000	.000	.000	.00000	.000	.000	.00000	.000	.333
3	1	4	5	.10000	.000	2.000	.00000	.000	.128	.00000	.000	.104
3	1	5	22	8.06522	2.120	1.972	49.24559	2.122	.194	41.37499	2.122	.191
3	1	7	3	.32677	.133	1.414	1.26680	.128	.063	1.09229	.129	.000
3	2	5	75	35.58767	6.054	1.764	264.76329	6.055	.303	221.16704	6.054	.309
3	2	6	49	.07000	.598	1.982	.53878	.606	.275	.45446	.604	.271
3	2	7	41	.04904	.352	1.624	.30791	.313	.351	.26156	.320	.331
3	3	1	54	.00000	.000	.386	.00000	.000	.424	.00000	.000	.325
3	3	5	84	.00000	.010	1.023	.00000	.000	.266	.00000	.000	.266
3	3	7	119	.06476	.378	1.180	.29083	.314	.325	.24611	.326	.322
3	4	5	58	4.41253	1.611	.919	17.41717	1.596	.234	14.06613	1.600	.231
3	4	6	11	1.13546	.125	.342	2.96573	.112	.211	2.47522	.115	.197
3	4	7	52	.08793	.073	.675	.31527	.043	.236	.25907	.039	.223
3	5	6	56	.36780	.333	.546	1.37121	.246	.207	1.06084	.273	.204
3	5	7	18	.20271	.006	.516	.56631	.026	.207	.45149	.016	.173
3	6	6	52	.22818	.038	.597	.76151	.080	.251	.55565	.035	.226
3	6	7	37	.18484	.014	.511	.66614	.105	.261	.49256	.069	.243
3	7	6	24	.18601	.343	.993	.80735	.463	.529	.51435	.406	.524
3	7	7	86	.23711	.057	.524	.88213	.154	.270	.56783	.106	.231
3	8	5	8	3.07020	.345	.622	15.70474	.349	.189	8.40211	.347	.261
3	8	6	33	.47889	.459	.748	2.21216	.546	.354	1.26136	.498	.274
3	8	7	85	.27484	.107	.545	1.03397	.154	.354	.61274	.126	.299
4	7	6	2	.00000	.000	.000	.57345	.005	.000	.31873	.003	.000

BIN RATIOS H= 2

I	J	K	NO	R	FSDI	PFSDI	R	FSDI	PFSDI	R	FSDI	PFSDI
1	1	3	7	.00000	.000	.866	.00000	.000	1.296	.00000	.000	.980
1	1	4	87	42.13157	2.622	.766	141.15185	2.983	1.021	128.34590	3.058	.880
1	1	5	126	1.88954	1.066	.855	8.71263	1.049	.696	8.17903	1.131	.592
1	1	6	69	.41332	.547	.956	1.39316	.689	.776	1.37758	.818	.627
1	1	7	51	.17979	.174	.770	.96096	.171	.178	.78922	.172	.177
1	2	1	1	.00000	.000	.000	.00000	.000	.006	.00000	.000	.000
1	2	4	98	.00000	.000	.671	.00000	.000	.220	.00000	.000	.215
1	2	6	37	.26425	.210	.513	.31080	.211	.474	.80750	.212	.323
1	2	7	134	.18773	.160	.492	.79784	.405	.548	.70110	.470	.500
1	3	1	32	.00000	.000	.341	.00000	.002	.530	.00000	.000	.275
1	3	2	77	.00000	.000	.208	.00000	.000	.353	.00000	.000	.194
1	3	3	44	.00000	.000	.745	.00000	.000	.263	.00000	.000	.252
1	3	4	76	.00000	.000	.865	.00000	.000	.220	.00000	.000	.210
1	3	6	44	.31002	.043	.369	1.32583	.080	.109	1.09455	.071	.105
1	3	7	97	.21095	.184	.370	.71860	.567	1.135	.78521	.801	.955
1	4	1	30	.00000	.007	.353	.00000	.000	.397	.00000	.000	.305
1	4	2	18	.00000	.000	.284	.00000	.000	.339	.00000	.000	.237
1	4	3	101	.00000	.000	.494	.00000	.000	.610	.00000	.000	.348
1	4	4	53	.00000	.000	.796	.00000	.000	.297	.00000	.000	.264
1	4	6	16	.33894	.263	.377	1.56143	.237	.359	1.29671	.307	.350
1	4	7	46	.22805	.011	.398	.31819	.030	.361	.82216	.051	.208
1	5	1	28	.00000	.000	.385	.00000	.000	.484	.00000	.000	.359
1	5	4	49	.00000	.000	1.057	.00000	.000	.264	.00000	.000	.273
1	5	6	14	.37877	.096	.333	.52645	.129	.419	1.31089	.161	.178
1	6	1	29	.00000	.000	.149	.00000	.000	.541	.00000	.000	.150
1	6	4	44	.00000	.000	.593	.00001	.000	.291	.00000	.000	.269
1	6	6	12	.91121	.225	.356	1.31846	.281	.357	2.66425	.333	.287
1	7	1	4	.00000	.000	.214	.00000	.000	.512	.00000	.000	.186
1	7	4	41	.00000	.000	.595	.00000	.000	.283	.00000	.000	.227
1	7	5	6	2.73071	.064	.266	3.53545	.074	.204	11.65803	.085	.266
1	7	6	10	1.86235	.102	.369	2.48363	.125	.330	5.82674	.146	.302
1	8	4	20	18.77202	1.025	.577	59.09650	1.019	.379	36.49242	1.022	.294
1	8	5	89	7.09079	1.243	.606	19.67220	1.074	.420	13.66859	.999	.282
1	8	6	14	2.50829	.334	.386	3.24856	.380	.544	2.74814	.348	.131
1	8	7	149	.64525	.407	.460	1.34021	.540	.668	.91596	.458	.470
2	1	2	-6	.00000	.000	.000	.00000	.002	1.077	.00000	.000	.769
2	1	3	25	.00000	.000	1.317	.00000	.000	1.247	.00000	.000	1.025
2	1	5	27	1.49997	.687	1.000	5.42115	.677	.309	4.64152	.679	.310
2	1	6	46	.32457	.196	1.462	1.33610	.204	.399	1.13516	.202	.395
2	1	7	7	.52528	.125	.745	.90281	.118	.236	.83115	.120	.158
2	2	1	7	.00000	.000	.222	.00000	.000	.544	.00000	.000	.149
2	3	1	25	.00000	.000	.273	.00000	.000	.602	.00000	.000	.286
2	3	2	57	.00000	.000	.253	.00000	.000	.365	.00000	.000	.206
2	4	1	18	.00000	.000	.265	.00000	.000	.439	.00000	.000	.239
2	4	3	13	.00000	.000	.410	.00000	.000	.298	.00000	.000	.245
2	4	5	4	1.03699	.029	.365	4.49313	.039	.062	3.49146	.036	.081
2	4	6	34	.64421	.203	.409	2.57197	255	.098	2.05512	.241	.092
2	4	7	6	.09116	.004	.500	.44325	.006	.210	.34571	.003	.191
2	5	5	35	1.34139	.079	.343	4.83764	.169	.161	3.71288	.140	.149
2	5	6	28	.19173	.028	.448	.08726	.081	.195	.52110	.064	.190
2	5	7	18	.12924	.013	.473	.47071	.025	.179	.36911	.014	.155
2	6	5	12	1.53859	.010	.399	5.28106	.035	.125	3.89131	.026	.128
2	6	6	51	.32102	.065	.403	1.08852	.155	.190	.78001	.114	.168
2	7	5	15	5.84272	.080	.239	19.31145	.127	.179	12.64366	.104	.122

2	7	6	28	.51185	.034	.421	1.43711	.133	.198	.96943	.043	.180
2	8	5	11	2.22786	.245	.484	5.72109	.267	.380	3.66091	.254	.127
2	8	6	40	.47838	.467	.665	1.47579	.613	.834	.90006	.529	.733
2	8	7	102	.39531	.218	.510	1.06794	.306	.505	.66766	.253	.413
3	1	2	2	.00000	.000	.000	.00000	.000	.000	.00000	.000	.333
3	1	4	5	.00000	.000	2.000	.00000	.000	.128	.00000	.000	.104
3	1	5	22	1.04949	.932	1.972	6.47069	.940	.194	5.42640	.939	.191
3	1	7	3	.35904	.132	1.414	1.39189	.127	.083	1.20015	.128	.000
3	2	5	75	14.98538	6.043	1.764	111.49125	6.043	.303	93.13236	6.043	.309
3	2	6	49	.07500	.517	1.982	.57832	.527	.275	.48765	.525	.271
3	2	7	41	.05467	.345	1.624	.34318	.305	.351	.29154	.312	.331
3	3	1	54	.00000	.000	.386	.00000	.009	.424	.00000	.000	.325
3	3	5	84	1.99150	.657	1.023	8.58442	.642	.266	7.25688	.645	.266
3	3	7	114	.07034	.390	1.180	.31614	.324	.325	.26747	.337	.322
3	4	5	58	.62220	.403	.919	2.29472	.338	.234	1.88511	.354	.231
3	4	6	11	.61885	.052	.342	1.61482	.039	.211	1.34809	.043	.197
3	4	7	52	.09630	.065	.475	.34607	.043	.236	.28360	.034	.223
3	5	6	56	.31216	.206	.546	1.15032	.116	.207	.89315	.143	.204
3	5	7	18	.21621	.008	.516	.60405	.024	.207	.48156	.014	.173
3	6	6	57	.25866	.047	.597	.86414	.071	.251	.63029	.027	.226
3	6	7	37	.19763	.020	.511	.73320	.111	.261	.52647	.076	.243
3	7	6	24	.20994	.353	.993	.91007	.474	.529	.58014	.417	.524
3	7	7	86	.26253	.060	.524	.97663	.157	.270	.62868	.108	.231
3	8	5	8	.79328	.058	.622	4.06334	.063	.189	2.17219	.060	.261
3	8	6	33	.40627	.238	.748	1.90318	.316	.354	1.07685	.273	.274
3	8	7	85	.30366	.113	.545	1.14198	.160	.354	.67689	.132	.299
4	7	6	2	.00000	.001	.000	.64188	.005	.000	.35676	.003	.000

BIN RATIOS M= 3

I	J	K	NO	R	FSD1	PFSD1	R	FSD1	PFSD1	R	FSD1	PFSD1
1	1	3	7	34.03313	1.584	.866	90.98918	1.583	1.296	122.40067	1.583	.980
1	1	4	87	2.52062	.800	.766	8.59070	1.071	1.021	7.62534	1.120	.880
1	1	5	126	.76394	.478	.855	3.30288	.534	.696	3.04678	.619	.592
1	1	6	60	.36054	.514	.956	1.25940	.539	.770	1.25567	.674	.627
1	1	7	51	.19931	.180	.770	1.06532	.178	.178	.87492	.178	.177
1	2	1	1	.00000	.000	.000	.00000	.000	.000	.00000	.000	.000
1	2	4	98	7.39703	1.438	.671	36.46761	1.437	.220	29.90639	1.437	.215
1	2	6	37	.27726	.185	.513	.32610	.186	.494	.84728	.166	.323
1	2	7	134	.20683	.147	.492	.67726	.406	.548	.77064	.470	.500
1	3	1	32	.00000	.000	.341	.00000	.000	.530	.00000	.000	.275
1	3	2	77	.00000	.000	.208	.00000	.000	.353	.00000	.000	.194
1	3	3	44	3.54961	.021	.745	14.23406	.029	.763	11.72756	.022	.252
1	3	4	26	.00000	.000	.865	.00000	.000	.220	.00000	.000	.210
1	3	6	44	.37931	.035	.369	1.40879	.071	.109	1.16296	.043	.105
1	3	7	97	.23218	.191	.370	.79639	.557	1.135	.87209	.792	.955
1	4	1	30	.00000	.000	.353	.00000	.000	.397	.00000	.000	.305
1	4	2	18	.00000	.000	.284	.00000	.000	.339	.00000	.000	.237
1	4	3	101	388.14504	3.979	.494	69.79958	3.979	.610	149.44047	3.979	.348
1	4	4	53	.00000	.000	.796	.00000	.000	.297	.00000	.000	.264
1	4	6	16	.34242	.209	.377	1.56153	.230	.359	1.29417	.300	.350
1	4	7	46	.25372	.014	.398	.35396	.034	.301	.91452	.056	.208
1	5	1	28	.00000	.000	.385	.00000	.000	.484	.00000	.000	.359
1	5	4	49	7.23760	1.349	1.057	31.50977	1.337	.264	22.86299	1.341	.273
1	5	6	14	.39958	.065	.333	.55558	.119	.419	1.38391	.151	.178
1	6	1	29	.00000	.000	149	.00000	.000	.541	.00000	.000	.150
1	6	4	44	4.69479	.889	.593	13.96195	.925	.291	10.27851	.909	.269
1	6	6	12	.80870	.170	.356	1.17365	.225	.357	2.37839	.279	.287
1	7	1	4	.00000	.000	.214	.00000	.000	.512	.00000	.000	.186
1	7	4	41	3.06875	.193	.595	9.25910	.102	.283	6.12911	.148	.227
1	7	5	6	1.88415	.041	.266	2.43998	.052	.204	8.04761	.042	.266
1	7	6	10	1.41884	.075	.369	1.89339	.098	.330	4.44472	.120	.302
1	8	4	20	2.27462	.315	577	7.04983	.340	.379	4.39138	.326	.294
1	8	5	89	2.08176	.447	.606	5.31587	.302	.420	3.55966	.303	.282
1	8	6	14	2.29063	.294	.386	2.95587	.349	.544	2.50670	.311	.131
1	8	7	149	.71443	.401	.410	1.48536	.534	.668	1.01454	.452	.470
2	1	2	6	.00000	.000	.000	00000	.000	1.077	.00000	.000	.769
2	1	3	25	.00000	.000	1.317	.00000	.000	1.247	.00000	.000	1.025
2	1	5	27	.85428	.444	1.000	3.07527	.430	.309	2.63509	.432	.310
2	1	6	46	.31498	.148	1.402	1.30031	.142	.399	1.10412	.143	.395
2	1	7	7	.58620	.122	.745	1.00750	116	.236	.92754	.117	.158
2	2	1	7	.00000	.000	.222	.00000	.000	.544	.00000	.000	.149
2	3	1	25	.00000	.000	.273	.00000	.000	.682	.00000	.000	.286
2	3	2	57	.00000	.000	.254	.00000	.000	.365	.00000	.000	.206
2	4	1	18	.00000	.000	.265	.00000	.000	.439	.00000	.000	.239
2	4	3	13	.00000	.000	.410	.00000	.000	.298	.00000	.000	.245
2	4	5	4	.75817	.016	.365	3.28543	.026	.062	2.55290	.023	.081
2	4	6	34	.53475	.121	.409	2.14409	.173	.098	1.71126	.159	.092
2	4	7	6	.10133	.003	.500	.49271	.006	.210	.38428	.004	.191
2	5	5	35	.88210	.047	.343	3.19041	.138	.161	2.44637	.109	.149
2	5	6	28	.20459	.023	.448	.73356	.076	.195	.55616	.058	.190
2	5	7	18	.14444	.011	.473	.52604	.027	.179	.41250	.016	.155
2	6	5	12	.96797	.010	.399	3.32241	.036	.125	2.44811	.026	.128
2	6	6	51	.32966	.036	.403	1.11817	.139	.190	.80116	.096	.168
2	7	5	15	2.09978	.049	.239	6.95018	.097	.179	4.54721	.073	.122

2	7	6	28	.54325	.040	.421	1.52431	.140	.198	1.02857	.090	.180
2	8	5	11	1.03444	.135	.484	2.65977	.158	.380	1.70071	.145	.127
2	8	6	40	.51158	.462	.665	1.57950	.609	.834	.96285	.523	.733
2	8	7	102	.43445	.218	.511	1.17387	.305	.565	.73381	.253	.413
3	1	2	2	.00000	.000	.000	.00003	.000	.000	.00000	.000	.333
3	1	4	5	3.45215	.582	2.000	30.23983	.578	.128	24.87926	.579	.104
3	1	5	22	.54404	.593	1.972	3.37213	.005	.194	2.82501	.603	.191
3	1	7	3	.39576	.130	1.414	1.53421	.124	.083	1.32287	.125	.000
3	2	5	75	.53695	.439	1.764	3.77833	.424	.303	3.18905	.427	.309
3	2	6	49	.07650	.451	1.982	.59068	.463	.275	.49795	.461	.271
3	2	7	41	.06087	.342	1.624	.38206	.302	.351	.32457	.309	.331
3	3	1	54	.00000	.000	.386	.00000	.030	.424	.00000	.000	.325
3	3	5	84	.51476	.264	1.023	2.21781	.212	.266	1.67553	.223	.266
3	3	7	114	.07732	.396	1.189	.34766	.329	.325	.29411	.342	.322
3	4	5	58	.36605	.216	.919	1.33299	.144	.234	1.09888	.161	.231
3	4	6	11	.45536	.031	.342	1.18788	.017	.211	.99175	.021	.197
3	4	7	52	.10608	.061	.675	.37997	.046	.236	.31231	.036	.223
3	5	6	56	.27585	.138	.546	1.01012	.049	.207	.78580	.076	.204
3	5	7	18	.23609	.009	.516	.65961	.023	.207	.52585	.013	.173
3	6	6	52	.27300	.037	.597	.91090	.081	.251	.66471	.037	.226
3	6	7	37	.21593	.021	.511	.80097	.112	.261	.57516	.077	.243
3	7	6	24	.22275	.341	.993	.96704	.461	.529	.61602	.404	.524
3	7	7	86	.29060	.063	.524	1.08161	.159	.270	.69589	.111	.231
3	8	5	8	.54530	.028	.622	2.79351	.033	.189	1.49324	.030	.261
3	8	6	33	.35575	.136	.748	1.67747	.209	.354	.94570	.169	.274
3	8	7	85	.33628	.118	.545	1.26453	.163	.354	.74957	.136	.299
4	7	6	2	.00000	.001	.000	.68786	.005	.000	.38232	.003	.000

BIN RATIOS M= 4

I	J	K	NO	R	FSDI	PFSDI	R	FSDI	PFSDI	R	FSDI	PFSDI
1	1	3	7	2.73504	.112	.866	7.30573	.111	1.296	9.81941	.110	.980
1	1	4	87	.95987	.581	.766	3.34420	.914	1.021	3.05586	.970	.880
1	1	5	126	.51713	.305	.855	2.17872	.450	.696	1.99674	.543	.592
1	1	6	60	.33390	.508	.956	1.16806	.463	.770	1.18979	.602	.627
1	1	7	51	.21836	.170	.770	1.16710	.167	.178	.95852	.168	.177
1	2	1	1	.00000	.000	.000	.00000	.000	.000	.00000	.000	.000
1	2	4	98	.96340	.245	.671	4.71547	.237	.220	3.87334	.238	.215
1	2	6	37	.28434	.163	.513	.33444	.163	.494	.86895	.164	.323
1	2	7	134	.22629	.150	.492	.97076	.404	.548	.85311	.469	.500
1	3	1	32	.00000	.000	.341	.00000	.003	.530	.00000	.000	.275
1	3	2	77	.00000	.000	.208	.00000	.000	.353	.00000	.000	.194
1	3	3	44	.86753	.018	.745	3.47920	.021	.263	2.86647	.013	.252
1	3	4	26	1.45745	.105	.865	8.33185	.112	.220	6.79855	.110	.210
1	3	6	44	.34130	.022	.369	1.46078	.058	.109	1.20574	.050	.105
1	3	7	97	.25662	.181	.370	.87210	.570	1.135	.95223	.604	.955
1	4	1	30	.00000	.000	.353	.00000	.000	.397	.00000	.000	.305
1	4	2	18	.00000	.000	.284	00000	.000	.339	.00000	.000	.237
1	4	3	101	29.91953	1.329	.494	5.64005	1.368	.610	11.93126	1.358	.348
1	4	4	53	1.43842	.221	.796	4.98146	.152	.297	3.98924	.171	.264
1	4	6	16	.34235	.178	.377	1.54838	.235	.359	1.28133	.302	.350
1	4	7	46	.27615	.011	.398	.38530	.029	.301	.99560	.051	.208
1	5	1	28	.00000	.000	.385	.00000	.000	.464	.00000	.000	.359
1	5	4	49	.76355	.162	1.057	3.03876	.077	.264	2.27446	.105	.273
1	5	6	14	.41012	.070	.333	.57054	.104	.419	1.42186	.136	.178
1	6	1	29	.00000	.000	.149	.00000	.000	.541	.00000	.000	.150
1	6	4	44	.91209	.108	.593	2.84726	.177	.291	2.05550	.143	.269
1	6	6	12	.74658	.140	.356	1.09979	.195	.357	2.23215	.249	.287
1	7	1	4	.00107	.000	.214	.00000	.000	.512	.00000	.000	.186
1	7	4	41	1.11826	.021	.595	3.32640	.083	.263	2.22137	.034	.227
1	7	5	6	1.57456	.033	.266	2.03925	.044	.204	6.72648	.054	.266
1	7	6	10	1.23340	.063	.369	1.64640	.087	.330	3.86591	.109	.302
1	8	4	20	1.13373	.263	.577	3.52486	.307	.379	2.19182	.282	.294
1	8	5	89	1.27193	.274	.606	3.15577	.206	.420	2.10416	.234	.282
1	8	6	14	2.17033	.286	.386	2.79593	.344	.544	2.37376	.305	.131
1	8	7	149	.78328	.409	400	1.62634	.543	.668	1.11174	.460	.470
2	1	2	6	.00000	.000	.000	.00000	.000	1.077	.00000	.000	.769
2	1	3	25	11.36049	.948	1.317	12.37960	.945	1.247	32.30913	.942	1.025
2	1	5	27	.66759	.369	1.000	2.40006	.354	.309	2.05704	.357	.310
2	1	6	46	.30758	.152	1.402	1.27160	.136	.399	1.07957	.138	.395
2	1	7	7	.63584	.124	.745	1.69283	.119	.236	1.00609	.120	.158
2	2	1	7	.10000	.000	.222	.00000	.000	.544	.00000	.000	.149
2	3	1	25	.00000	.000	.273	.00000	.000	.682	.00000	.000	.286
2	3	2	57	.00000	.000	.253	.00000	.000	.365	.00000	.000	.206
2	4	1	18	.00000	.000	.265	.00000	.000	.439	.00000	.000	.239
2	4	3	13	24.92115	1.170	.410	5.59429	1.170	.298	10.70083	1.170	.245
2	4	5	4	.64801	.011	.365	2.60821	.021	.062	2.16206	.018	.081
2	4	6	34	.48345	.081	.409	1.94245	.133	.098	1.54946	.119	.092
2	4	7	6	.11640	.004	.500	.53686	.006	.210	.41867	.003	.191
2	5	5	35	.72418	.036	.343	2.62295	.127	161	2.01059	.098	.149
2	5	6	28	.21343	.016	.448	.76556	.069	.195	.58035	.051	.190
2	5	7	18	.15641	.014	.473	.56969	.025	.179	.44672	.014	.155
2	6	5	12	- .78315	.010	.399	2.68603	.036	.125	1.98067	.026	.128
2	6	6	51	.33120	.025	.403	1.12398	.131	.190	.80515	.088	.168
2	7	5	15	1.48862	.044	.239	4.92844	.092	.179	3.22410	.068	.122

2	7	6	28	.56236	.049	.421	1.57653	.150	.198	1.06429	.099	.180
2	8	5	11	.76049	.099	.484	1.95697	.122	.380	1.25073	.109	.127
2	8	6	40	.53535	.454	.665	1.65488	.602	.834	1.00811	.516	.733
2	8	7	102	.48092	.219	.510	1.29962	.307	.565	.81220	.254	.413
3	1	2	2	.00000	.000	.000	.00000	.000	.000	.00000	.000	.333
3	1	4	5	1.43847	.378	2.000	12.56101	.369	.128	10.34083	.371	.104
3	1	5	22	.40442	.466	1.972	2.51236	.480	.194	2.10383	.477	.191
3	1	7	3	.43739	.136	1.414	1.69567	.130	.063	1.46208	.131	.000
3	2	5	75	.25429	.305	1.764	1.78457	.297	.343	1.50697	.298	.309
3	2	6	49	.07723	.408	1.982	.59684	.421	.275	.50306	.419	.271
3	2	7	41	.06619	.345	1.424	.41553	.306	.351	.35300	.313	.331
3	3	1	54	.00000	.000	.386	.00000	.000	.424	.00000	.000	.325
3	3	5	84	.33305	.219	1.023	1.43181	.164	.266	1.21137	.175	.266
3	3	7	114	.08551	.389	1.160	.38430	.322	.325	.32514	.335	.322
3	4	5	58	.29058	.160	.919	1.05191	.086	.234	.66806	.104	.231
3	4	6	11	.39013	.022	.342	1.01758	.008	.211	.84959	.012	.197
3	4	7	52	.11724	.065	.475	.42015	.039	.236	.34529	.031	.223
3	5	6	56	.25732	.103	.546	.93921	.020	.207	.73137	.042	.204
3	5	7	18	.26289	.009	.516	.73447	.023	.207	.58553	.013	.173
3	6	6	57	.28037	.023	.597	.93392	.096	.251	.68196	.051	.226
3	6	7	47	.24040	.021	.511	.69177	.112	.261	.64036	.077	.243
3	7	6	24	.23048	.323	.993	1.00274	.443	.529	.63812	.386	.524
3	7	7	86	.31923	.057	.524	1.18763	.156	.270	.76448	.107	.231
3	8	5	8	.45506	.017	.422	2.33136	.622	.189	1.24617	.019	.261
3	8	6	33	.32918	.091	.748	1.55675	.161	.354	.87622	.127	.274
3	8	7	85	.36864	.111	.545	1.38633	.158	.354	.82173	.130	.299
4	7	6	2	.00000	.000	.000	.72202	.004	.000	.40130	.002	.000

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BIN RATIOS M= 5

I	J	K	NO	R	FSDI	PFSDI	R	FSDI	PFSDI	R	FSDI	PFSDI
1	1	3	7	1.28142	.079	.866	3.42278	.079	1.296	4.60035	.078	.980
1	1	4	87	.60640	.527	.766	2.13922	.889	1.021	1.95843	.949	.880
1	1	5	126	.42133	.240	.855	1.75462	.446	.696	1.60346	.539	.592
1	1	6	60	.32205	.508	.956	1.15914	.417	.770	1.16408	.560	.627
1	1	7	51	.23857	.157	.770	1.27480	.155	.178	1.04698	.155	.177
1	2	1	1	.00000	.000	.000	.00000	.000	.000	.00000	.000	.000
1	2	4	98	.46404	.095	.671	2.26787	.087	.220	1.86349	.089	.215
1	2	6	37	.29317	.145	.513	.34462	.146	.494	.89594	.146	.323
1	2	7	134	.25176	.155	.492	1.07416	.402	.546	.94445	.468	.500
1	3	1	32	.00000	.000	.341	.00000	.000	.530	.00000	.000	.275
1	3	2	77	41.83233	.546	.208	4.53047	.526	.353	13.47194	.531	.194
1	3	3	44	.42047	.018	.745	1.68636	.019	.263	1.38936	.011	.252
1	3	4	26	.41011	.025	.865	2.34572	.032	.220	1.91382	030	.210
1	3	6	44	.35481	.011	.369	1.51920	.047	.109	1.25385	.039	.105
1	3	7	97	.28350	.168	.370	.95218	.587	1.135	1.03589	.818	.955
1	4	1	30	.00000	.000	.353	.00000	.000	.397	.00000	.000	.305
1	4	2	18	16 14380	.056	.284	2.23119	.050	.339	5.69916	.051	.237
1	4	3	101	6.44245	.448	.494	1.30698	.463	.610	2.76580	.459	.348
1	4	4	53	.46389	.079	.796	1.59024	.009	.297	1.27711	.028	.264
1	4	6	16	.34660	.156	.377	1.55803	.239	.359	1.28791	.304	.350
1	4	7	46	.29926	.010	.398	.41762	.023	.301	1.07925	.044	.208
1	5	1	28	.00000	.000	.385	.00000	.000	.484	.00000	.000	.359
1	5	4	49	.36952	.072	1.057	1.45903	.015	.264	1.09495	.014	.273
1	5	6	14	.42281	.057	.333	.56845	.091	.419	1.46711	.124	.178
1	6	1	29	.00000	.000	.149	.00000	.000	.541	.00000	.000	.150
1	6	4	44	.49967	.036	.593	1.56114	.125	.291	1.12748	.085	.269
1	6	6	17	.73456	.121	.356	1.06887	.177	.357	2.17154	.230	.287
1	7	1	4	.00000	.000	.214	.00000	.000	.512	.00000	.000	.186
1	7	4	41	.70567	.027	.595	2.08992	.127	.263	1.39870	.077	.227
1	7	5	6	1.43057	.029	.266	1.85286	.039	.204	6.11193	.050	.266
1	7	6	10	1.14618	.057	.369	1.53020	.080	.330	3.59362	.102	.302
1	8	4	20	.78786	.245	.577	2.45745	.297	.379	1.52397	.268	.294
1	8	5	89	.99178	.240	.606	2.43218	.236	.420	1.61894	.265	.282
1	8	6	14	2.12286	.287	.386	2.73203	.346	.544	2.32108	.306	.131
1	8	7	149	.85651	.419	.400	1.77542	.554	.668	1.21489	.471	.470
2	1	2	6	.00000	.152	.000	23 21738	.151	1.077	38.55951	.150	.769
2	1	3	25	3.66204	.632	1.317	4.04968	.627	1.247	10.38790	.624	1.025
2	1	5	27	.58543	.331	1.000	2.10327	.316	.309	1.80292	.319	.310
2	1	6	46	.30652	.167	1.402	1.20876	.145	.399	1.07676	.149	.395
2	1	7	7	.68605	.130	.745	1.17917	.123	.236	1.08557	.124	.158
2	2	1	7	.00000	.000	.222	.00000	.000	.544	.00000	.000	.149
2	3	1	25	.00000	.000	.273	.00000	.000	.682	.00000	.000	.286
2	3	2	57	131.50277	1.051	.253	13.45833	1.046	.365	39.60565	1.047	.206
2	4	1	18	.00000	.000	.265	.00000	.000	.439	.00000	.000	.239
2	4	3	13	3.59291	.112	.410	.80626	.113	.298	1.54518	.113	.245
2	4	5	4	.59600	.008	.365	2.56290	.018	.062	2.00697	.015	.081
2	4	6	34	.45960	.067	.409	1.84893	.109	.098	1.47436	.095	.092
2	4	7	6	.11979	.005	.500	.56247	.005	.210	.45428	.002	.191
2	5	5	35	.65223	.030	.343	2.36260	.122	.161	1.81072	.092	.149
2	5	6	28	.22314	.009	.448	.80067	.062	.195	.60689	.045	.190
2	5	7	18	.16841	.016	.473	.61349	U22	.179	.48105	.011	.165
2	6	5	12	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

2	7	6	28	.58400	.057	.421	1.63598	.158	.198	1.10484	.107	.180
2	8	5	11	.64679	.078	.484	1.06524	.102	.380	1.06396	.088	.127
2	8	6	40	.56125	.447	.665	1.73678	.596	.834	1.05735	.510	.733
2	8	7	102	.53241	.221	.510	1.43755	.310	.505	.89902	.257	.413
3	1	2	2	.00030	.285	.000	.00000	.284	.000	105.88941	.263	.333
3	1	4	5	.93308	.299	2.000	6.13782	.289	.128	6.70109	.291	.104
3	1	5	22	.34458	.413	1.972	2.14309	.414	.194	1.79420	.411	.191
3	1	7	3	.48303	.143	1.414	1.87270	.138	.083	1.61470	.139	.000
3	2	5	75	.18198	.277	1.764	1.27271	.271	.303	1.07488	.272	.309
3	2	6	49	.07879	.377	1.982	.60927	.391	.275	.51349	.388	.271
3	2	7	41	.07165	.349	1.624	.44990	.310	.351	.38218	.317	.331
3	3	1	54	.00000	.000	.386	.00000	.000	.424	.00600	.000	.325
3	3	5	84	.26661	.194	1.023	1.14464	.138	.266	.96867	.149	.266
3	3	7	114	.09457	.380	1.180	.42470	.313	.325	.35938	.326	.322
3	4	5	58	.25691	.132	.919	.92807	.058	.234	.76626	.076	.231
3	4	6	11	.35961	.017	.342	.93793	.003	.211	.78311	.007	.197
3	4	7	52	.12948	.071	.675	.46436	.031	.236	.38156	.027	.223
3	5	6	56	.24935	.082	.546	.90824	.020	.207	.70769	.023	.204
3	5	7	18	.29340	.008	.516	.81973	.024	.207	.65350	.013	.173
3	6	6	82	.28920	.013	.597	.96191	.108	.251	.70279	.063	.226
3	6	7	37	.26822	.020	.511	.99507	.111	.261	.71451	.076	.243
3	7	6	24	.23926	.308	.993	1.04287	.428	.529	.66307	.371	.524
3	7	7	86	.34984	.053	.524	1.30170	.153	.270	.83785	.104	.231
3	8	5	8	.41314	.011	.622	2.11664	.016	.189	1.13137	.013	.261
3	8	6	33	.31713	.064	.748	1.50236	.134	.354	.84480	.095	.274
3	8	7	85	.40304	.103	.545	1.51583	.153	.354	.89644	.123	.299
4	7	6	2	.00000	.000	.000	.75899	.004	.000	.42185	.002	.000

BIN RATIOS M= 6

I	J	K	NO	R	FSD1	PFSD1	R	FSD1	PFSD1	R	FSD1	PFSD1
1	1	3	7	.82263	.064	.866	2.19731	.064	1.296	2.95323	.063	.980
1	1	4	87	.46624	.502	.766	1.65781	.880	1.021	1.51954	.942	.880
1	1	5	124	.37563	.212	.865	1.55384	.454	.696	1.41763	.547	.592
1	1	6	60	.31996	.511	.956	1.16044	.388	.770	1.16758	.534	.627
1	1	7	51	.25953	.147	.770	1.38706	.145	.178	1.13918	.145	.177
1	2	1	1	.00000	.000	.000	.00000	.000	.000	.00000	.000	.000
1	2	4	98	.31273	.053	.671	1.52742	.050	.220	1.25524	.051	.215
1	2	6	37	.30515	.132	.513	.35891	.133	.494	.93255	.133	.323
1	2	7	134	.27613	.160	.492	1.18140	.401	.548	1.03918	.467	.500
1	3	1	32	.00000	.000	.341	.00000	.000	.530	.00000	.000	.275
1	3	2	77	14.73567	.262	.208	1.58368	.230	.353	4.71794	.237	.194
1	3	3	44	.27431	.018	.745	1.10017	.019	.263	.90641	.010	.252
1	3	4	26	.23796	.010	.865	1.36122	.017	.220	1.11056	.015	.210
1	3	6	44	.37156	.004	.369	1.59142	.039	.109	1.31336	.031	.105
1	3	7	97	.31138	.158	.370	1.03570	.601	1.135	1.12340	.830	.955
1	4	1	30	.00003	.000	.353	.00000	.000	.397	.00000	.000	.305
1	4	2	18	7.56850	.039	.284	1.04592	.033	.339	2.67166	.034	.237
1	4	3	101	3.46277	.263	.494	.65151	.273	.610	1.37892	.270	.348
1	4	4	53	.27683	.048	.796	.94685	.025	.297	.76089	.008	.264
1	4	6	16	.34602	.140	.377	1.59343	.243	.359	1.31615	.306	.350
1	4	7	46	.32353	.012	.398	.45154	.019	.301	1.16706	.039	.208
1	5	1	28	298.72222	1.926	.385	17.15165	1.922	.484	105.65904	1.923	.359
1	5	4	49	.24828	.037	1.057	.97744	.049	.264	.73426	.020	.273
1	5	6	14	.44006	.048	.333	.61266	.082	.419	1.52793	.115	.178
1	6	1	29	117.14857	.698	.149	10.35728	.693	.541	56.01945	.695	.150
1	6	4	44	.35993	.024	.593	1.12566	.124	.291	.81203	.082	.269
1	6	6	12	.73297	.109	.356	1.06728	.164	.357	2.16972	.217	.287
1	7	1	4	92.64961	.029	.214	10.15405	.019	.512	48.69034	.023	.186
1	7	4	41	.54401	.047	.595	1.60795	.147	.283	1.07720	.097	.227
1	7	5	6	1.36491	.026	.266	1.76786	.037	.204	5.83174	.047	.266
1	7	6	10	1.11198	.053	.369	1.48469	.076	.330	3.48705	.098	.302
1	8	4	20	.63661	.237	.577	1.98289	.292	.379	1.23174	.261	.294
1	8	5	89	.86247	.238	.606	2.16140	.266	.420	1.39745	.292	.282
1	8	6	14	2.12886	.290	.386	2.73789	.350	.544	2.32713	.310	.131
1	8	7	149	.93280	.428	.400	1.93088	.563	.668	1.32239	.480	.470
2	1	2	6	.00000	.121	.000	10.71875	.120	1.077	17.80131	.119	.769
2	1	3	25	2.02384	.531	1.317	2.23688	.526	1.247	5.73494	.522	1.025
2	1	5	27	.54635	.308	1.000	1.96202	.292	.309	1.68199	.295	.310
2	1	6	46	.31135	.181	1.402	1.28973	.157	.399	1.09439	.162	.395
2	1	7	7	.71908	.133	.745	1.27035	.126	.236	1.16950	.128	.158
2	2	1	7	.00000	.000	.222	.00000	.000	.544	.00000	.000	.149
2	3	1	25	107.69010	1.336	.273	8.20370	1.336	.682	28.26658	1.336	.286
2	3	2	57	30.95726	.384	.253	3.09172	.349	.365	9.14736	.357	.206
2	4	1	18	.00000	.000	.265	.00000	.000	.439	.00000	.000	.239
2	4	3	13	1.79657	.040	.410	.40423	.039	.298	.77275	.039	.245
2	4	5	4	.57306	.017	.365	2.48150	.016	.062	1.92973	.013	.081
2	4	6	34	.46233	042	.409	1.82115	.094	.098	1.45190	.080	.092
2	4	7	6	.12964	.005	.500	.63036	.004	.210	.49163	.002	.191
2	5	5	35	.61876	.026	.343	2.24211	.118	.161	1.71819	.089	.149
2	5	6	28	.23467	.005	.448	.84226	.058	.195	.63836	040	.190
2	5	7	18	.18113	.019	.473	.65988	.020	.179	.51741	.009	.155
2	6	5	12	.66058	.011	.399	2.26735	.036	.125	1.67069	.026	.128
2	6	6	51	.34565	.024	.403	1.17393	.123	.190	.84067	.080	.168
2	7	5	15	1.14017	.041	.239	3.77540	.089	.179	2.46961	.065	.122

2	7	6	28	.61111	.063	.421	1.71094	.164	.198	1.15580	.113	.180
2	8	5	11	.59243	.064	.484	1.52582	.088	.380	.97467	.074	.127
2	8	6	40	.59146	.441	.665	1.83174	.592	.834	1.11465	.505	.733
2	8	7	102	.58581	.223	.510	1.58122	.314	.505	.98906	.240	.413
3	1	2	2	.00000	.175	.000	.00000	.194	.000	40.16498	.193	.333
3	1	4	5	.72855	.262	2.000	6.35034	.252	.128	5.22980	.254	.104
3	1	5	22	.31549	.359	1.972	1.96363	.373	.194	1.64372	.370	.191
3	1	7	3	.53037	.150	1.414	2.05631	.144	.063	1.77301	.145	.000
3	2	5	75	.15068	.266	1.764	1.05433	.261	.303	.89219	.262	.309
3	2	6	49	.08138	.354	1.982	.62954	.369	.275	.53053	.366	.271
3	2	7	41	.07740	.353	1.624	.48602	.314	.351	.41284	.321	.331
3	3	1	54	66.50251	.449	.386	7.93446	.414	.424	19.18229	.421	.325
3	3	5	84	.23550	.177	1.023	1.01013	.121	.266	.85500	.133	.266
3	3	7	114	.10396	.372	1.180	.46662	.306	.325	.39490	.319	.322
3	4	5	58	.24107	.116	.919	.86975	.042	.234	.71833	.059	.231
3	4	6	11	.34715	.014	.342	.90539	.000	.211	.75594	.004	.197
3	4	7	52	.14219	.077	.675	.51022	.026	.236	.41918	.026	.223
3	5	6	56	.24848	.068	.546	.90388	.030	.207	.70458	.015	.204
3	5	7	18	.32507	.008	.516	.90819	.024	.207	.72403	.014	.173
3	6	6	52	.30111	.010	.597	1.00048	.117	.251	.73127	.072	.226
3	6	7	37	.29709	.020	.611	1.10224	.111	.261	.79144	.075	.243
3	7	6	24	.25030	.297	.993	1.09245	.416	.529	.69415	.359	.524
3	7	7	86	.38168	.053	.524	1.42033	.152	.270	.91416	.103	.231
3	8	5	8	.39199	.007	.622	2.01858	.012	.189	1.07895	.009	.261
3	8	6	33	.31484	.046	.748	1.49319	.115	.354	.83912	.077	.274
3	8	7	85	.43887	.096	.545	1.65073	.149	.354	.97836	.118	.299
4	7	6	2	.00000	.000	.000	.80148	.004	.000	.44547	.002	.000

BIN RATIOS M= 7

I	J	K	NO	R	FSDI	PFSDI	R	FSDI	PFSDI	R	FSDI	PFSDI
1	1	3	7	.51672	.050	.866	1.38019	.050	1.296	1.85499	.049	.980
1	1	4	87	.35892	.477	.766	1.28834	.873	1.021	1.18261	.937	.880
1	1	5	126	.34126	.194	.855	1.40130	.471	.696	1.27617	.562	.592
1	1	6	60	.33060	.515	.956	1.20974	.357	.770	1.21989	.505	.627
1	1	7	51	.30053	.134	.770	*1.60613	.131	.178	1.31911	.132	.177
1	2	1	1	4.91659	.000	.000	.69989	.000	.000	1.63431	.000	.000
1	2	4	98	.21091	.043	.471	1.02952	.069	.220	.84617	.067	.215
1	2	6	37	.33384	.116	.513	.39266	.116	.494	1.02025	.117	.323
1	2	7	134	.32310	.167	.492	1.38746	.400	.548	1.22112	.467	.500
1	3	1	32	7.61946	.085	.341	.67984	.051	.530	2.29150	.057	.275
1	3	2	77	5.62055	.170	.208	.60228	.136	.353	1.79550	.144	.194
1	3	3	44	.17494	.019	.745	.70165	.018	.263	.57807	.010	.252
1	3	4	26	.14323	.002	.865	.81939	.007	.220	.66849	.005	.210
1	3	6	44	.40963	.009	.369	1.75511	.030	.109	1.44833	.021	.105
1	3	7	97	.36504	.144	.370	1.19875	.619	1.135	1.29526	.845	.955
1	4	1	30	8.08729	.122	.353	.64703	.063	.397	2.70972	.077	.305
1	4	2	18	3.40571	.024	.284	.47061	.018	.339	1.20213	.020	.237
1	4	3	101	1.70674	.128	.494	.32098	.136	.610	.67942	.134	.348
1	4	4	53	.16976	.028	.796	.57974	.046	.297	.46608	.027	.264
1	4	6	46	.38305	.121	.377	1.70552	.247	.359	1.40744	.308	.350
1	4	7	46	.37154	.017	.398	.51863	.013	.301	1.34066	.033	.208
1	5	1	28	16.16688	.191	.385	.98754	.246	.484	5.96380	.225	.359
1	5	4	49	.16647	.009	1.057	.65376	.078	.264	.49151	.049	.273
1	5	6	14	.48153	.037	.333	.67066	.071	.419	1.67319	.103	.178
1	6	1	29	17.88985	.077	.149	1.49795	.048	.541	8.28958	.039	.150
1	6	4	44	.26034	.033	.593	.81320	.134	.291	.58692	.092	.269
1	6	6	12	.76109	.094	.356	1.10911	.149	.357	2.25647	.203	.287
1	7	1	4	19.28662	.006	.214	2.11324	.005	.512	10.13447	.000	.186
1	7	4	41	.42112	.065	.595	1.24246	.166	.283	.83311	.116	.227
1	7	5	6	1.34111	.023	.266	1.73710	.033	.204	5.73045	.044	.266
1	7	6	10	1.11872	.048	.369	1.49384	.072	.330	3.50890	.094	.302
1	8	4	20	.51579	.228	.577	1.60758	.287	.379	.99825	.254	.294
1	8	5	89	.76276	.248	.606	1.84559	.303	.420	1.22611	.327	.282
1	8	6	14	2.22395	.297	.386	2.85784	.357	.544	2.43043	.317	.131
1	8	7	149	1.08141	.440	.400	2.23450	.575	.668	1.53199	.492	.470
2	1	2	6	.00000	.095	.000	4.76145	.094	1.077	7.90749	.093	.769
2	1	3	25	1.10370	.437	1.317	1.21926	.432	1.247	3.12440	.428	1.025
2	1	5	27	.52344	.281	1.000	1.87881	.265	.309	1.61081	.268	.310
2	1	6	46	.33041	.202	1.402	1.36990	.176	.399	1.16221	.181	.395
2	1	7	7	.84496	.137	.745	1.45237	.131	.236	1.33707	.132	.158
2	2	1	7	15.90723	.038	.222	.65324	.039	.544	3.75743	.039	.149
2	3	1	25	17.40566	.381	.273	1.38177	.423	.682	4.72094	.414	.286
2	3	2	57	9.76386	.256	.253	.97015	.219	.365	2.87354	.227	.206
2	4	1	18	25.93239	.149	.265	1.09191	.072	.439	7.79289	.090	.239
2	4	3	13	.93353	.047	.410	.21007	.044	.298	.40157	.045	.245
2	4	5	4	.56806	.005	.365	2.46188	.014	.062	1.91292	.011	.081
2	4	6	34	.46236	.025	.409	1.86323	.077	.098	1.48508	.062	.092
2	4	7	6	.14907	.006	.500	.72486	.003	.210	.56533	.001	.191
2	5	5	35	.60410	.023	.343	2.18977	.114	.161	1.67789	.085	.149
2	5	6	28	.26007	.003	.448	.93372	.052	.195	.70760	.034	.190
2	5	7	18	.20665	.022	.473	.75291	.017	.179	.59034	.006	.155
2	6	5	12	.64154	.011	.399	2.20198	.036	.125	1.62253	.027	.128
2	6	6	51	.37280	.029	.403	1.26658	.120	.190	.90689	.079	.168
2	7	5	15	1.06622	.040	.239	3.53073	.087	.179	2.30950	.064	.122

2	7	6	28	.67309	.070	.421	1.88317	.171	.198	1.27258	.120	.180
2	8	5	11	.56567	.046	.484	1.43180	.070	.380	.91437	.056	.127
2	8	6	40	.65715	.435	.665	2.03720	.586	.834	1.23896	.499	.733
2	8	7	102	.68837	.227	.510	1.65724	.319	.505	1.16202	.244	.413
3	1	2	2	.00000	.142	.000	.00000	.141	.000	15.54654	.140	.333
3	1	4	5	.57075	.227	2.000	4.97221	.216	.128	4.09529	.218	.104
3	1	5	22	.29526	.312	1.972	1.63924	.325	.194	1.53934	.322	.191
3	1	7	3	.62151	.158	1.414	2.40979	.153	.083	2.07777	.154	.000
3	2	5	75	.12708	.258	1.764	.89056	.254	.303	.75222	.254	.309
3	2	6	49	.08814	.326	1.982	.68218	.342	.275	.57483	.339	.271
3	2	7	41	.08878	.357	1.624	.55761	.318	.351	.47365	.325	.331
3	3	1	54	16.70638	.324	.386	1.98361	.287	.424	4.80001	.294	.325
3	3	5	84	.21200	.156	1.023	.90827	.101	.266	.76896	.112	.266
3	3	7	114	.12202	.362	1.180	.54726	.296	.325	.46321	.309	.322
3	4	5	58	.23252	.097	.919	.83774	.024	.234	.69212	.041	.231
3	4	6	11	.34737	.011	.342	.90592	.003	.211	.75640	.001	.197
3	4	7	52	.16664	.085	.675	.59843	.019	.236	.49156	.028	.223
3	5	6	56	.25764	.052	.546	.93573	.045	.207	.72976	.020	.204
3	5	7	18	.38554	.008	.516	1.07711	.024	.207	.85870	.014	.173
3	6	6	52	.32964	.015	.597	1.09386	.128	.251	.79992	.083	.226
3	6	7	37	.35223	.019	.511	1.30690	.110	.261	.93837	.074	.243
3	7	6	24	.27559	.284	.993	1.20484	.402	.529	.76496	.345	.524
3	7	7	86	.44353	.057	.624	1.65071	.152	.270	1.06236	.104	.231
3	8	5	8	.38692	.003	.622	1.98238	.008	.189	1.05959	.005	.261
3	8	6	33	.32510	.026	.748	1.54393	.094	.354	.86699	.056	.274
3	8	7	85	.50870	.069	.595	1.91356	.144	.354	1.13407	.112	.299
4	7	6	2	.00000	.001	.000	.89275	.003	.000	.49620	.002	.000

BIN RATIOS N= 8

I	J	K	NO	R	FSD1	PFSD1	R	FSD1	PFSD1	R	FSD1	PFSD1
1	1	3	7	.41683	.044	.866	1.11335	.093	1.296	1.49634	.043	.980
1	1	4	87	.32240	.464	.766	1.16338	.869	1.021	1.06879	.935	.880
1	1	5	126	.33435	.191	.855	1.36782	.482	.696	1.24455	.573	.592
1	1	6	60	.34728	.518	.956	1.27662	.341	.770	1.28883	.492	.627
1	1	7	51	.33607	.126	.770	1.79604	.124	.178	1.47509	.125	.177
1	2	1	1	1.81633	.000	.000	.25656	.000	.000	.60376	.000	.000
1	2	4	98	.17756	.061	.671	.86652	.068	.220	.71224	.067	.215
1	2	6	37	.36174	.107	.513	.42549	.108	.494	1.10555	.108	.323
1	2	7	134	.36341	.171	.492	1.56384	.399	.548	1.37679	.466	.500
1	3	1	32	2.85880	.059	.341	.25488	.022	.530	.85925	.028	.275
1	3	2	77	3.58914	.136	.208	.38416	.102	.353	1.14557	.110	.194
1	3	3	44	.14211	.019	.745	.56997	.018	.263	.46958	.010	.252
1	3	4	26	.11516	.004	.865	.65883	.003	.220	.53750	.002	.210
1	3	6	44	.44576	.014	.369	1.91028	.024	.109	1.57630	.016	.105
1	3	7	97	.41103	.136	.370	1.34017	.629	1.135	1.44500	.854	.955
1	4	1	30	3.36707	.077	.353	.26869	.025	.397	1.12625	.031	.305
1	4	2	18	2.32113	.018	.284	.32072	.012	.339	.81928	.013	.237
1	4	3	101	1.22662	.077	.494	.23064	.087	.610	.48823	.084	.348
1	4	4	53	.13743	.021	.796	.46907	.054	.297	.37716	.035	.264
1	4	6	16	.41126	.111	.377	1.62608	.250	.359	1.50618	.309	.350
1	4	7	46	.41359	.020	.398	.57737	.011	.301	1.49261	.029	.208
1	5	1	28	6.99466	.127	.385	.42797	.186	.484	2.58314	.164	.359
1	5	4	49	.13963	.004	1.057	.54779	.089	.264	.41198	.061	.273
1	5	6	14	.52193	.031	333	.72707	.065	.419	1.81430	.098	.178
1	6	1	29	8.43576	.030	.149	.70324	.077	.541	3.89878	.039	.150
1	6	4	44	.22710	.042	.593	.70869	.143	.291	.51169	.101	.269
1	6	6	12	.80147	.087	.356	1.16842	.142	.357	2.37807	.195	.287
1	7	1	4	9.59090	.000	.214	1.05082	.010	.512	5.03953	.006	.186
1	7	4	41	.37979	.073	.595	1.11959	.174	.283	.75103	.124	.227
1	7	5	6	1.36968	.021	.266	1.77414	.032	.204	5.85273	.042	.266
1	7	6	10	1.15949	.046	.369	1.54836	.070	.330	3.63714	.092	.302
1	8	4	20	.47513	.224	.577	1.48131	.285	.379	.91969	.251	.294
1	8	5	89	.73728	.258	.606	1.77773	.324	.420	1.18044	.345	.282
1	8	6	14	2.34960	.302	.386	3.01796	.362	.544	2.56737	.322	.131
1	8	7	149	1.21007	.446	.400	2.49788	.582	.668	1.71360	.499	.470
2	1	2	6	.00000	.084	.000	3.22747	.083	1.077	5.35990	.083	.769
2	1	3	25	.83284	.393	1.317	.91981	.388	1.247	2.35648	.383	1.025
2	1	5	27	.52761	.267	1.000	1.89329	.251	.309	1.62331	.254	.310
2	1	6	46	.35207	.215	1.402	1.46042	.188	.399	1.23889	.193	.395
2	1	7	7	.93828	.140	.745	1.61280	.133	.236	1.48476	.134	.158
2	2	1	7	6.01574	.012	.222	.24705	.014	.544	1.42101	.013	.149
2	3	1	25	7.63524	.154	.273	.61228	.183	.682	2.08749	.176	.286
2	3	2	57	5.69414	.214	.253	.56482	.176	.365	1.67359	.184	.206
2	4	1	18	9.36510	.099	.265	.39282	.022	.439	2.80641	.038	.239
2	4	3	13	.69736	.060	.410	.15693	.057	.298	.29998	.058	.245
2	4	5	4	.58281	.003	.365	2.52583	.013	.062	1.96260	.010	.081
2	4	6	34	.48301	.017	.409	1.94733	.068	.098	1.55192	.054	.092
2	4	7	6	.16606	.007	.600	.80747	.003	.210	.62976	.000	.191
2	5	5	35	.61496	.021	.343	2.22954	.112	.161	1.70826	.083	.149
2	5	6	28	.28380	.005	.448	1.01908	.048	.195	.77225	.031	.190
2	5	7	18	.22921	.023	.473	.83517	.016	.179	.65483	.004	.155
2	6	5	12	.65133	.011	.399	2.23569	.036	.125	1.64730	.027	.128
2	6	6	51	.40690	.033	.403	1.36231	.119	.190	.97536	.079	.168
2	7	5	15	1.06264	.034	.239	3.51896	.087	.179	2.30177	.043	.122

2	7	6	28	.73208	.074	.421	2.04747	.175	.198	1.38387	.174	.180
2	8	5	11	.55395	.036	.484	1.42774	.060	.380	.91163	.046	.127
2	8	6	40	.71809	.431	.665	2.22731	.583	.834	1.35416	.495	.733
2	8	7	102	.77612	.230	.610	2.09347	.323	.505	1.31002	.268	.413
3	1	2	2	.00000	.123	.000	.60000	.122	.000	9.99874	.121	.333
3	1	4	5	.51753	.211	2.000	4.50744	.199	.128	3.71267	.202	.104
3	1	5	22	.29373	.286	1.972	1.83058	.300	.194	1.53196	.297	.191
3	1	7	3	.69965	.163	1.414	2.71286	.158	.083	2.33907	.159	.000
3	2	5	75	.12003	.255	1.764	.84104	.251	.303	.71041	.251	.309
3	2	6	49	.09495	.311	1.982	.73515	.327	.275	.61944	.324	.271
3	2	7	41	.09877	.360	1.624	.62038	.321	.351	.52697	.328	.331
3	3	1	54	8.75847	.285	.386	1.03833	.247	.424	2.51334	.254	.325
3	3	5	84	.20684	.144	1.023	.88559	.089	.266	.74986	.100	.266
3	3	7	114	.13749	.357	1.180	.61634	.291	.325	.57173	.303	.322
3	4	5	58	.23526	.088	.919	.84703	.016	.234	.69991	.032	.231
3	4	6	11	.35908	.009	.342	.93643	.004	.211	.78188	.001	.197
3	4	7	52	.18760	.049	.675	.67401	.018	.236	.55358	.031	.223
3	5	6	56	.27111	.043	.546	.98387	.053	.207	.76749	.027	.204
3	5	7	18	.43698	.008	.516	1.22081	.024	.207	.97326	.014	.173
3	6	6	52	.35738	.020	.597	1.18512	.134	.251	.86688	.089	.226
3	6	7	37	.39914	.018	.511	1.48104	.109	.261	1.06338	.074	.243
3	7	6	24	.29969	.277	.993	1.31137	.395	.529	.83225	.338	.524
3	7	7	86	.49695	.060	.624	1.84968	.153	.270	1.19036	.106	.231
3	8	5	8	.39505	.001	.622	2.02408	.006	.189	1.08187	.003	.261
3	8	6	33	.34145	.015	.748	1.62262	.082	.354	.91082	.045	.274
3	8	7	85	.56916	.085	.545	2.14114	.141	.354	1.26890	.108	.299
4	7	6	2	.00000	.001	.000	.97687	.003	.000	.54295	.001	.000

BIN RATIOS M= 9

I	J	K	NO	R	FSDI	PFSDI	R	FSDI	PFSDI	R	FSDI	PFSDI
1	1	3	7	.37311	.341	.866	.99659	.040	1.296	1.33942	.039	.980
1	1	4	87	.30746	.456	.766	1.11303	.867	1.021	1.02304	.934	.880
1	1	5	126	.33547	.192	.855	1.36944	.490	.696	1.24537	.580	.592
1	1	6	60	.16336	.520	.956	1.33819	.333	.770	1.35189	.484	.627
1	1	7	51	.36458	.122	.773	1.94838	.120	.178	1.60021	.120	.177
1	2	1	1	1.06614	.000	.002	.15177	.000	.000	.35439	.000	.000
1	2	4	98	.16321	.093	.471	.79640	.100	.220	.65463	.099	.215
1	2	6	37	.38518	.102	.513	.45305	.102	.494	1.17717	.103	.323
1	2	7	134	.39560	.174	.492	1.70447	.399	.548	1.50088	.464	.500
1	3	1	32	1.69054	.048	.341	.15066	.013	.530	.50796	.017	.275
1	3	2	77	2.81858	.120	.208	.30151	.065	.353	.89922	.094	.194
1	3	3	44	.12769	.019	.745	.51216	.018	.263	.42195	.009	.252
1	3	4	26	.10337	.005	.865	.59137	.002	.220	.48246	.001	.210
1	3	6	44	.47582	.017	.369	2.03935	.021	.109	1.68277	.013	.105
1	3	7	97	.44772	.131	.370	1.45363	.035	1.135	1.56538	.859	.955
1	4	1	30	2.10013	.055	.353	.16731	.029	.397	.70163	.018	.305
1	4	2	18	1.88497	.015	.284	.20045	.009	.339	.66532	.010	.237
1	4	3	101	1.02896	.052	.494	.19346	.065	.610	.40953	.041	.348
1	4	4	53	.12378	.018	.796	.42234	.058	.297	.33962	.039	.264
1	4	6	16	.43550	.105	.377	1.93064	.251	.359	1.59197	.310	.350
1	4	7	46	.44747	.022	.398	.62469	.010	.301	1.61504	.027	.208
1	5	1	28	4.43876	.095	.385	.27177	.159	.484	1.63991	.135	.359
1	5	4	49	.12806	.010	1.057	.50209	.096	.264	.37769	.067	.273
1	5	6	14	.55586	.028	.333	.77443	.062	.419	1.93269	.094	.178
1	6	1	29	5.60096	.012	.149	46569	.098	.541	2.58528	.058	.150
1	6	4	44	.21308	.048	.593	.66451	.150	.291	.47992	.108	.269
1	6	6	12	.83908	.083	.356	1.22354	.138	.357	2.49082	.191	.287
1	7	1	4	6.58495	.003	.214	.72146	.013	.512	3.46001	.008	.186
1	7	4	41	.36316	.078	.595	1.07010	.179	.283	.71800	.128	.227
1	7	5	6	1.40800	.020	.266	1.82378	.031	.204	6.01655	.041	.266
1	7	6	10	1.20308	.045	.369	1.60663	.068	.330	3.77411	.091	.302
1	8	4	20	.45964	.222	.577	1.43324	.284	.379	.88976	.249	.294
1	8	5	89	.73405	.265	.606	1.70645	.335	.420	1.17261	.356	.282
1	8	6	14	2.46460	.306	.386	3.10485	.365	.544	2.69280	.325	.131
1	8	7	149	1.31321	.450	.400	2.70921	.586	.668	1.85923	.503	.470
2	1	2	6	.00000	.078	.000	2.61346	.078	1.077	4.34020	.077	.769
2	1	3	25	.71811	.367	1.317	.79298	.362	1.247	2.03128	.358	1.025
2	1	5	27	.53826	.259	1.000	1.93124	.243	.309	1.65589	.246	.310
2	1	6	46	.37116	.223	1.402	1.54006	.196	.399	1.30638	.201	.395
2	1	7	7	1.01369	.141	.745	1.74244	.134	.236	1.60410	.136	.158
2	2	1	7	3.56577	.001	.222	.14644	.003	.544	.84230	.002	.149
2	3	1	25	4.80558	.082	.273	.38728	.073	.682	1.31900	.070	.286
2	3	2	57	4.24856	.193	.253	.42109	.155	.365	1.24792	.144	.206
2	4	1	18	5.44533	.080	.265	.22803	.014	.439	1.62982	.019	.239
2	4	3	13	.59983	.067	.410	.13499	.064	.298	.25803	.065	.245
2	4	5	4	.60067	.003	.365	2.60328	.012	.062	2.02278	.010	.081
2	4	6	34	.50339	.013	.409	2.03003	.063	.098	1.61771	.049	.092
2	4	7	6	.17974	.007	.500	.87398	.003	.210	.68163	.000	.191
2	5	5	35	.63099	.020	.343	2.28789	.111	.161	1.75291	.082	.149
2	5	6	28	.30343	.007	448	1.08968	.047	.195	.82572	.029	.190
2	5	7	18	.24747	.024	.473	.90174	.015	.179	.70701	.004	.155
2	6	5	12	.66730	.011	.399	2.29040	.036	.125	1.68768	.027	.128
2	6	6	51	.42498	.034	.403	1.44430	.119	.190	1.03401	.079	.168
2	7	5	15	1.07751	.039	.239	3.56826	.087	.179	2.33400	.063	.122

2	7	6	28	.78123	.074	.421	2.18447	.178	.198	1.47663	.126	.180
2	8	5	11	.56153	.030	.484	1.44752	.053	.380	.92418	.039	.127
2	8	6	40	.76838	.429	.665	2.38402	.582	.834	1.44918	.493	.733
2	8	7	102	.84607	.232	.510	2.28181	.325	.505	1.42800	.270	.413
3	1	2	2	.00000	.114	.000	.00000	.113	.000	7.88467	.112	.333
3	1	4	5	.49633	.203	2.000	4.32217	.191	.128	3.56017	.193	.104
3	1	5	22	.29731	.271	1.972	1.85337	.285	.194	1.55095	.287	.191
3	1	7	3	.76201	.166	1.414	2.95470	.160	.083	2.54758	.142	.000
3	2	5	75	.11797	.243	1.764	.82655	.250	.303	.69818	.250	.309
3	2	6	49	.10075	.302	1.982	.78016	.318	.275	.65734	.315	.271
3	2	7	41	.10682	.341	1.624	.67099	.322	.351	.56995	.329	.331
3	3	1	54	6.15811	.266	.386	.72953	.229	.424	1.76611	.236	.325
3	3	5	84	.20707	.137	1.023	.88619	.082	.266	.75043	.093	.266
3	3	7	114	.14982	.343	1.180	.67145	.288	.325	.56840	.300	.322
3	4	5	58	.24056	.083	.919	.86578	.013	.234	.71546	.028	.231
3	4	6	11	.37273	.008	.342	.97021	.005	.211	.81008	.002	.197
3	4	7	52	.20433	.092	.675	.73431	.018	.236	.60306	.033	.223
3	5	6	56	.28372	.039	.546	1.02916	.058	.207	.80293	.031	.204
3	5	7	18	.47786	.007	.616	1.33504	.024	.207	1.06433	.014	.173
3	6	6	52	.38067	.023	.597	1.26186	.137	.251	.92315	.092	.226
3	6	7	37	.43644	.018	.511	1.61947	.109	.261	1.16276	.073	.243
3	7	6	24	.31977	.273	.993	1.39999	.390	.529	.88827	.334	.524
3	7	7	86	.53972	.063	.524	2.00900	.153	.270	1.29287	.107	.231
3	8	5	8	.40604	.000	.622	2.08039	.005	.189	1.11196	.002	.261
3	8	6	33	.35693	.009	.748	1.69697	.075	.354	.95233	.039	.274
3	8	7	85	.61764	.082	.545	2.32358	.140	.354	1.37699	.107	.299
4	7	6	2	.00000	.001	.000	1.04611	.003	.000	.58143	.001	.000

BIN RATIOS M=10

I	J	K	NO	16-27 R	16-27 FSD1	16-27 PFSD1	27-400 R	27-400 FSD1	27-400 PFSD1	18-400 R	18-400 FSD1	18-400 PFSD1
1	1	3	7	.35045	.039	.866	.93607	.038	1.296	1.25607	.037	.980
1	1	4	87	.30061	.452	.766	1.09049	.866	1.021	1.00205	.933	.880
1	1	5	124	.33865	.194	.855	1.38062	.495	.696	1.25513	.585	.592
1	1	6	60	.37619	.521	.956	1.38684	.327	.770	1.40364	.480	.627
1	1	7	51	.38668	.119	.770	2.06651	.117	.178	1.69723	.118	.177
1	2	1	1	.77682	.000	.000	.11058	.000	.000	.25822	.000	.000
1	2	4	98	.15598	.100	.471	.76103	.108	.220	.62556	.106	.215
1	2	6	37	.40373	.099	.513	.47488	.099	.494	1.23389	.100	.323
1	2	7	134	.42050	.176	.492	1.81318	.398	.548	1.59680	.466	.560
1	3	1	32	1.23677	.042	.341	.11020	.012	.530	.37155	.012	.275
1	3	2	77	2.44179	.110	.208	.26111	.076	.353	.77881	.084	.194
1	3	3	44	.12022	.019	.745	.48217	.018	.263	.39725	.009	.252
1	3	4	26	.09741	.006	.865	.55729	.001	.220	.45466	.001	.210
1	3	6	44	.49953	.018	.369	2.14115	.019	.109	1.76673	.011	.105
1	3	7	97	.47610	.128	.371	1.54162	.639	1.135	1.65882	.842	.955
1	4	1	30	1.56343	.043	.353	.12602	.039	.397	.52664	.022	.305
1	4	2	18	1.66556	.013	.284	.23013	.007	.339	.58787	.008	.237
1	4	3	101	.92645	.040	.494	.17455	.055	.610	.36952	.051	.348
1	4	4	53	.11687	.017	.796	.39871	.060	.297	.32063	.041	.264
1	4	6	16	.45490	.102	.377	2.01462	.252	.359	1.66092	.310	.350
1	4	7	46	.47379	.023	.398	.66147	.009	.301	1.71016	.026	.208
1	5	1	28	3.37749	.077	.385	.20693	.144	.484	1.24842	.119	.359
1	5	4	49	.12219	.014	1.057	.47895	.099	.264	.36032	.071	.273
1	5	6	14	.58274	.025	.333	.81194	.060	.419	2.02643	.092	.178
1	6	1	29	4.37775	.015	.149	.36369	.111	.541	2.01918	.070	.150
1	6	4	44	.20626	.052	.593	.64298	.154	.291	.46445	.112	.269
1	6	6	12	.67016	.060	.356	1.26904	.135	.357	2.58380	.188	.287
1	7	1	4	5.25889	.004	.214	.57616	.014	.512	2.76322	.009	.186
1	7	4	41	.35572	.080	.595	1.04790	.181	.263	.70319	.131	.227
1	7	5	6	1.44325	.020	.266	1.86946	.030	.204	6.16729	.041	.266
1	7	6	10	1.24080	.044	.369	1.65703	.068	.330	3.89256	.090	.302
1	8	4	20	.45339	.221	.577	1.41392	.283	.379	.87771	.248	.294
1	8	5	89	.73750	.270	.606	1.77257	.343	.420	1.17647	.363	.282
1	8	6	14	2.55897	.308	.386	3.28549	.367	.544	2.79576	.327	.131
1	8	7	149	1.39316	.453	.400	2.67310	.588	.668	1.97215	.505	.470
2	1	2	6	.00000	.075	.000	2.30531	.074	1.077	3.82844	.074	.769
2	1	3	25	.65908	.352	1.317	.72773	.347	1.247	1.86399	.342	1.025
2	1	5	27	.54913	.254	1.000	1.97005	.238	.309	1.68920	.241	.310
2	1	6	46	.38660	.228	1.402	1.60441	.200	.399	1.36091	.206	.395
2	1	7	7	1.07237	.142	.745	1.84332	.135	.236	1.69697	.137	.158
2	2	1	7	2.61127	.006	.222	.10724	.003	.544	.61684	.003	.149
2	3	1	25	3.62751	.096	.273	.29314	.042	.682	.99779	.052	.286
2	3	2	57	3.56563	.182	.253	.35324	.144	.365	1.04695	.152	.206
2	4	1	18	3.94798	.071	.265	.16520	.020	.439	1.18102	.011	.239

2	4	3	13	.55030	.071	.410	.12384	[illegible]	.298	.23673	.0[illegible]	.245
2	4	5	4	.61671	.002	.365	2.67281	.012	.062	2.07479	.009	.081
2	4	6	34	.52058	.010	.409	2.64967	.060	.098	1.67314	.046	.092
2	4	7	6	.19036	.007	.500	.52564	.003	.210	.72193	.000	.191
2	5	5	35	.64604	.019	.343	2.34263	.111	.161	1.79482	.081	.149
2	5	6	28	.31887	.008	.448	1.14522	.045	.195	.86779	.027	.190
2	5	7	16	.26169	.024	.473	.95356	.014	.179	.74764	.003	.155
2	6	5	12	.68259	.011	.399	2.34787	.036	.125	1.72634	.027	.128
2	6	6	51	.44423	.037	.403	1.50980	.119	.190	1.08088	.079	.168
2	7	5	15	1.09526	.039	.239	3.62709	.086	.179	2.37247	.063	.122
2	7	6	28	.82002	.077	.421	2.29263	.179	.198	1.54985	.128	.180
2	8	5	11	.57058	.026	.484	1.47101	.049	.380	.93912	.035	.127
2	8	6	40	.60790	.428	.465	2.50712	.581	.834	1.52383	.492	.733
2	8	7	102	.90015	.234	.510	2.42741	.326	.505	1.51921	.271	.413
3	1	2	2	.00000	.109	.000	.00000	.108	.000	6.84857	.107	.333
3	1	4	5	.48702	.197	2.000	4.24073	.185	.128	3.49314	.188	.104
3	1	5	22	.30179	.262	1.972	1.88158	.275	.194	1.57451	.272	.191
3	1	7	3	.81024	.168	1.414	3.14175	.162	.083	2.70885	.163	.006
3	2	5	75	.11759	.252	1.764	.82384	.249	.303	.69590	.249	.309
3	2	6	49	.10536	.296	1.982	.81599	.312	.275	.68752	.309	.271
3	2	7	41	.11308	.362	1.624	.71034	.323	.351	.60336	.330	.331
3	3	1	54	4.98256	.254	.386	.59063	.218	.424	1.42851	.226	.325
3	3	5	84	.20876	.132	1.023	.69318	.077	.266	.75639	.088	.266
3	3	7	114	.15935	.351	1.180	.71406	.285	.325	.60450	.298	.322
3	4	5	58	.24578	.080	.919	.88434	.011	.234	.73085	.025	.231
3	4	6	11	.38335	.008	.342	.99972	.006	.211	.83473	.002	.197
3	4	7	52	.21726	.094	.475	.76093	.019	.236	.64132	.035	.223
3	5	6	56	.29416	.036	.546	1.06671	.061	.207	.83230	034	.204
3	5	7	18	.50943	.007	.516	1.42341	.025	.267	1.13463	.014	.173
3	6	6	52	.39911	.025	.597	1.32266	.139	.251	.96773	.094	.226
3	6	7	37	.46523	.018	.511	1.72634	.109	.261	1.23948	.073	.243
3	7	6	24	.33563	.270	.993	1.46967	.388	.529	.93247	.331	.524
3	7	7	86	.57287	.065	.524	2.13244	.154	.270	1.37228	.108	.231
3	8	5	8	.41617	.001	.422	2.13229	.004	.189	1.13970	.001	.261
3	8	6	33	.36982	.006	748	1.75872	.071	.354	.98684	.035	.274
3	8	7	85	.65522	.081	.545	2.46502	.139	.354	1.46079	.106	.299
4	7	6	2	.00000	.001	.000	1.10047	.003	.000	.61164	.001	.000

Table A2 Ratio of Measured to Model Counts as a Function of B' and L'

BIN RATIOS SUMMED OVER ANGLE, M= 1

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	3	.34510	.19482	.221	.493	1.14067	.96952	.231	.208	.99295	.79953	.236	.194
1	2	2	.19823	.19344	.133	.355	.39376	.35838	.207	.367	.68962	.69465	.218	.277
1	3	2	.22703	.25613	.042	.261	1.09790	1.07997	.091	.141	.93623	.94524	.084	.134
1	4	2	.25024	.20744	.015	.274	.45186	.30165	.026	.231	.86603	.77092	.051	.184
1	5	1	.33400	.33400	.087	.333	.46437	.46437	.121	.419	1.15674	1.15664	.153	.178
1	6	1	1.06844	1.06844	.322	.356	1.53793	1.53793	.377	.357	3.09245	3.09245	.428	.287
1	7	2	5.16896	4.25348	.152	.219	7.12359	5.73646	.166	.178	16.32830	14.43745	.178	.200
1	8	3	1.29224	.97612	.364	.257	3.27024	1.96281	.427	.303	2.61630	1.36298	.388	.130
2	1	3	.58897	.43585	.156	.567	1.37671	.94435	.152	.174	1.10806	.85773	.152	.143
2	4	3	.25408	.08713	.008	.241	1.69704	.41775	.007	.156	1.28191	.31721	.003	.061
2	5	3	.22854	.13526	.018	.239	.77275	.45714	.028	.102	.58978	.34484	.014	.094
2	6	1	.28911	.28911	.122	.403	.98089	.98089	.186	.190	.70273	.70273	.153	.168
2	7	1	.45363	.45363	.039	.421	1.27298	1.27296	.139	.198	.85894	.85894	.089	.180
2	8	2	.38858	.38166	.209	.408	1.08655	1.07396	.289	.445	.67107	.66512	.241	.374
3	1	2	.54526	.34644	.177	1.165	1.79148	1.34090	.170	.082	1.09302	1.15668	.172	.060
3	2	3	.08530	.05717	.370	1.027	.61090	.37279	.345	.177	.50535	.31717	.350	.174
3	3	1	.06478	.06478	.378	1.100	.29083	.29083	.314	.325	.24611	.24611	.326	.322
3	4	3	.27921	.13736	.078	.315	.86659	.42778	.053	.131	.70664	.34083	.056	.125
3	5	2	.25929	.20430	.008	.375	.80221	.59994	.033	.146	.61334	.46627	.021	.132
3	6	2	.20258	.19473	.015	.390	.72257	.72701	.064	.181	.52336	.53255	.033	.166
3	7	2	.21656	.22822	.069	.485	.85540	.86217	.164	.253	.55034	.55587	.119	.226
3	8	3	.47832	.36541	.120	.362	2.51787	1.53417	.155	.158	1.22960	.86162	.135	.160
4	1	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	2	.00000	.00000	.000	.000	.00000	.00010	.000	.000	.00000	.00000	.000	.000
4	4	1	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	1	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	7	3	1.00000	1.00000	.001	1.732	.57345	.57345	.008	1.732	.31873	.31873	.005	1.732

BIN RATIOS SUMMED OVER ANGLE,M= 2

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	4	46323	.24097	.225	.415	1.34362	1.18673	.233	.215	1.18076	.98581	.242	.199
1	2	2	.21873	.21345	.124	.355	.43728	.39302	.196	.347	.76212	.77112	.206	.277
1	3	2	.25110	.28452	.050	.261	1.23414	1.20067	.099	.141	1.05390	1.06031	.093	.134
1	4	2	.27406	.23116	.015	.274	.49944	.34911	.037	.231	.95180	.86746	.062	.184
1	5	1	.37877	.37877	.096	.333	.52645	.52645	.129	.419	1.31089	1.31089	.161	.178
1	6	1	.91121	.91121	.225	.356	1.31846	1.31846	.281	.357	2.66425	2.66425	.333	.287
1	7	2	2.28428	2.31459	.055	.219	3.04307	3.05182	.066	.178	7.934 9	8.52774	.076	.200
1	8	4	1.62017	1.39899	.277	.236	4.52342	2.83607	.313	.239	3.06406	1.99382	.284	.120
2	1	3	.56378	.45609	.119	.567	1.39359	1.11509	.117	.174	1.14636	1.00328	.117	.143
2	4	3	.25323	.10352	.006	.241	1.69932	.50893	.008	.056	1.18922	.37535	.015	.061
2	5	3	.24063	.15895	.014	.239	.82130	.56021	.030	.102	.62725	.41742	.018	.094
2	6	2	.53293	1.03136	.012	.284	2.09215	3.00148	.040	.106	1.42769	2.24161	.030	.103
2	7	2	1.22330	.70491	.034	.216	2.79808	2.73144	.092	.133	2.15222	1.64643	.065	.103
2	8	3	.61220	.60341	.160	.313	1.85931	1.77255	.200	.298	1.59806	1.07513	.177	.149
3	1	2	.49506	.39104	.164	1.165	1.82171	1.53494	.158	.082	1.200 9	1.32364	.159	.000
3	2	3	.09359	.06341	.346	1.027	.66922	.41620	.325	.177	.55393	.35406	.329	.174
3	3	2	.14549	.10983	.346	.775	.67181	.46702	.305	.207	.56545	.39950	.313	.206
3	4	3	.25128	.18926	.047	.315	.77568	.61062	.033	.131	.63518	.45506	.031	.125
3	5	2	.25419	.21879	.011	.375	.79261	.65675	.028	.146	.61090	.50159	.018	.132
3	6	2	.22176	.21264	.020	.390	.79453	.60774	.061	.181	.57561	.59887	.028	.166
3	7	2	.24163	.25338	.072	.485	.95311	.95919	.167	.253	.61300	.61800	.122	.226
3	8	3	.42672	.49524	.057	.362	2.08015	2.29362	.068	.158	1.07207	1.25403	.062	.160
4	1	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000 0	.00000	.000	.000
4	2	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	1	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	1	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000 0	.00000	.000	.000
4	7	4	1.00000	1.00000	.002	2.000	.64188	.64188	.010	2.000	.356*6	.35676	.006	2.000

BIN RATIOS SUMMED OVER ANGLE,M= 3

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.51948	.31410	.195	.374	1.47327	1.46802	.205	.222	1.31519	1.24110	.218	.202
1	2	3	.32072	.24588	.134	.317	.99784	.44181	.203	.206	1.52019	.89824	.211	.178
1	3	3	.33363	.65495	.021	.256	1.75804	3.46142	.034	.125	1.495 4	3.29907	.028	.119
1	4	3	.40708	.25863	.022	.241	.69197	.39491	.051	.223	1.40763	.96965	.080	.164
1	5	2	.51634	.42334	.113	.358	1.39776	.60404	.154	.229	2.20267	1.52920	.192	.153
1	6	2	1.17326	.93252	.202	.315	2.36923	1.43017	.256	.226	3.943.6	2.90136	.302	.197
1	7	3	1.82935	1.78375	.041	.213	2.87179	2.74076	.044	.151	5.94193	6.26209	.056	.151
1	8	4	1.37056	1.51802	.177	.236	3.40776	3.35950	.182	.239	2.41643	2.31791	.170	.120
2	1	3	.53371	45188	.101	.567	1.38958	1.22091	.096	.174	1.16858	1.08672	.097	.143
2	4	3	.25734	12074	.005	.241	1.60852	.60207	.008	.056	1.14849	.43986	.005	.061
2	5	3	.25166	.18070	.011	.239	.86564	.63480	.030	.102	.66189	.47672	.019	.094
2	6	2	.49302	.67876	.011	.284	1.86640	2.37098	.040	.106	1.29535	1.69855	.029	.103
2	7	2	1.02987	.81590	.031	.216	2.58466	2.83095	.081	.133	1.96478	1.79172	.057	.103
2	8	3	.58513	64497	.122	.313	1.69187	1.81079	.154	.298	1.24756	1.11732	.135	.149
3	1	3	.59861	.48159	.156	1.010	2.59870	1.97182	.151	.069	1.32492	1.69822	.152	.060
3	2	3	.09496	.09127	.733	1.027	.67537	.60472	.221	.177	.56095	.51452	.224	.174
3	3	2	.14187	.15776	.224	.775	.64801	.71341	.183	.207	.54600	.60135	.191	.206
3	4	3	.23518	.22487	.032	.315	.72262	.77786	.020	.131	.593.8	.57201	.021	.125
3	5	2	.25388	.23814	.012	.375	.79839	.74157	.022	.146	.62009	.55278	.016	.132
3	6	2	23897	.23392	019	.390	.85344	.86124	.067	.181	.61833	.63264	.035	.166
3	7	2	.26294	.27741	075	.485	1.03967	1.04931	.167	.253	.66936	.67698	.123	.226
3	8	3	.39296	.46257	.034	.362	1.88250	2.22426	.042	.158	.99456	1.21331	.037	.160
4	1	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	3	.00000	.00000	.000	000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	3	.00000	.00000	000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	3	00000	.00000	000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	7	4	1.00000	1.00000	.001	2.000	.68786	68786	.009	2.000	.38232	.38232	.006	2.000

BIN RATIOS SUMMED OVER ANGLE,M= 4

I	J	NO	R(MOD)	R(EXP)	SDE	SUM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.45521	.49231	.102	.374	1.45130	2.14930	.109	.222	1.29647	1.99670	.114	.202
1	2	3	.31616	.30690	.102	.317	.94351	.58929	.135	.206	1.37025	1.17189	.139	.178
1	3	4	.38014	.51907	.017	.253	2.06299	2.64250	.027	.109	1.74263	2.32125	.019	.104
1	4	4	.47468	.29139	.019	.237	.97582	.49216	.044	.180	1.735 7	1.23765	.067	.140
1	5	2	.46172	.47683	.069	.358	1.13693	1.07128	.062	.229	1.66947	1.80314	.084	.153
1	6	2	.80831	.83718	.086	.315	1.66164	1.62303	.131	.226	2.13730	2.11663	.128	.197
1	7	3	1.33874	1.25431	.018	.213	2.16024	2.12686	.037	.151	3.376.4	3.11016	.030	.151
1	8	4	1.17543	1.22253	.149	.236	2.71177	2.77430	.156	.239	1.99670	1.90003	.151	.120
2	1	4	.63634	.48091	.109	.524	1.48560	1.33282	.102	.186	1 27597	1.18644	.103	.153
2	4	4	.35000	.14453	.006	.208	1.68343	.66451	.009	.058	1.27429	.48064	.005	.061
2	5	3	.75933	.20472	.011	.239	.89703	.67721	.028	.102	.66647	.50807	.017	.094
2	6	2	.46646	.56108	.010	.284	1.73344	2.07090	.040	.106	1.21362	1.48070	.029	.103
2	7	2	.93201	.83722	.033	.216	2.45337	2.72460	.081	.133	1.77005	1.76349	.057	.103
2	8	3	.57587	.62727	.103	.313	1.61718	1.70309	.132	.298	1.09688	1.06743	.115	.149
3	1	3	.53267	.50692	.142	1.010	2.56075	2.23647	.139	.069	1.46395	1.91809	.139	.000
3	2	3	.09340	.09758	.201	1.027	.66117	.65621	.192	.177	.551 8	.55765	.194	.174
3	3	2	.14204	.16311	.198	.775	.64278	.74661	.154	.207	.54215	.62653	.162	.206
3	4	3	.23005	.25000	.026	.315	.70449	.82714	.011	.131	.58005	.61825	.014	.125
3	5	2	.26015	.26245	.011	.375	.82451	.83125	.015	.146	.64458	.61506	.014	.132
3	6	2	.25732	.25794	.016	.390	.91276	.91400	.073	.181	.66126	.66464	.043	.166
3	7	2	.28176	.30169	.069	.485	1.11808	1.13331	.163	.253	.72085	.73298	.118	.226
3	8	3	.38019	.42116	.022	.362	1.78718	2.06981	.030	.158	.95726	1.12410	.025	.160
4	1	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	4	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	4	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	7	4	1.00000	1.00000	.000	2.000	.72202	.72202	.008	2.000	.40130	.40130	.005	2.000

BIN RATIOS SUMMED OVER ANGLE,N= 5

I	J	NO	R(MOD)	R(EXP)	SDE	SUM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.41138	.48507	.083	.374	1.43769	1.97096	.090	.222	1.28453	1.96979	.093	.202
1	2	3	.30511	.33234	.072	.317	.87676	.76344	.083	.206	1.207 5	1.26976	.086	.178
1	3	5	.54589	.38327	.012	.176	1.80319	1.79301	.021	.105	1.704 6	1.46185	.015	.091
1	4	5	.62077	.36368	.016	.187	.97404	.98007	.012	.159	1.62404	1.49616	.027	.121
1	5	2	.40870	.39730	.045	.358	.92810	1.20485	.018	.229	1.29120	1.17393	.018	.153
1	6	2	.62438	.53938	.039	.315	1.29436	1.31136	.104	.226	1.46905	1.29523	.088	.197
1	7	3	1.10526	.97253	.019	.213	1.81502	1.78494	.038	.151	2.44861	2.80627	.040	.151
1	8	4	1.05919	1.02279	.142	.236	2.33963	2.36987	.163	.239	1.76541	1.62523	.155	.120
2	1	5	.66880	.57914	.090	.464	1.59465	1.81947	.085	.191	1.42137	1.66461	.086	.155
2	3	1	131.50277	131.50277	1.051	.253	13.45833	13.45833	1.046	.365	39.60565	39.60565	1.047	.206
2	4	4	.35266	.17785	.006	.208	1.43008	.71447	.007	.058	1.17617	.51559	.004	.061
2	5	3	.26867	.22559	.009	.239	.93326	.71565	.025	.102	.71444	.53492	.014	.094
2	6	2	.45476	.52053	.010	.284	1.67072	1.92952	.039	.106	1.17599	1.38042	.028	.103
2	7	2	.88467	.84278	.034	.216	2.39864	2.66301	.081	.133	1.70466	1.74261	.058	.103
2	8	3	.57870	.60604	.089	.313	1.59287	1.61684	.117	.298	1.02419	1.02093	.100	.149
3	1	4	.60702	.56723	.123	.737	2.41057	1.86032	.120	.077	1.61696	2.60902	.120	.000
3	2	3	.09311	.09756	.196	1.027	.65694	.66396	.183	.177	.54952	.56356	.184	.174
3	3	2	.14449	.16509	.182	775	.64912	.75370	.136	.207	.54795	.63217	.145	.206
3	4	3	.23071	.26724	.021	.315	.70536	.85473	.005	.131	.58160	.65071	.009	.125
3	5	2	.27020	.28870	.011	.375	.86180	.86548	.015	.146	.67703	.67278	.012	.132
3	6	2	.27750	.28066	.011	.390	.97789	.97797	.078	.181	.70809	.70808	.049	.166
3	7	2	.30169	.32747	.064	485	1.20113	1.22183	.159	.253	.77537	.79211	.115	.226
3	8	3	.37755	.39602	.015	.362	1.75225	1.97195	.022	.158	.94719	1.06745	.018	.160
4	1	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	5	.00000	.00000	.000	000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	2	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	2	.00900	00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	7	4	.00000	.00000	000	.000	.75899	.75899	.008	2.000	.42105	.42185	.004	2.000

BIN RATIOS SUMMED OVER ANGLE.H= 7

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.35594	.40515	.061	.374	1.46083	1.40624	.066	.222	1.31638	1.58784	.068	.202
1	2	3	.28508	.25493	.057	.317	.77106	.67783	.068	.206	.95865	.92272	.068	.178
1	3	6	.50466	.16721	.003	.157	.94669	.82785	.009	.106	1.08710	.72191	.007	.087
1	4	6	.62533	.39084	.015	.166	.56950	.51322	.014	.148	.96201	.87467	.017	.112
1	5	3	.54181	.19651	.012	.264	.72003	.69236	.056	.210	1.069[illegible]0	.71746	.050	.144
1	6	3	1.06260	.41017	.032	.155	1.01254	1.20238	.049	.214	1.59947	1.75582	.042	.125
1	7	4	1.35695	2.66114	.008	.156	1.55710	1.99043	.007	.149	2.27204	9.79157	.001	.119
1	8	4	.94180	.60776	.142	.236	1.96810	1.98209	.177	.239	1.54249	1.34427	.164	.120
2	1	5	.65543	.66538	.078	.464	1.59946	1.93187	.074	.191	1.52964	2.01405	.075	.155
2	2	1	15.90723	15.90723	.038	.222	.65324	.65324	.039	.544	3.75703	3.75743	.039	.149
2	3	2	12.37601	11.85459	.217	.186	1.08266	1.07979	.204	.336	3.43629	3.33546	.207	.169
2	4	5	.50950	.28474	.005	.167	1.00172	.73782	.005	.061	1.08977	.59465	.002	.061
2	5	3	.30716	.26770	.004	.239	1.07494	.84694	.020	.102	.82309	.62761	.008	.094
2	6	2	.47218	.53692	.011	.284	1.70397	1.88218	.039	.106	1.20929	1.35347	.028	.103
2	7	2	.87988	.88011	.036	.216	2.49498	2.72510	.082	.133	1.73668	1.80075	.059	.103
2	8	3	.62462	.58040	.061	.313	1.66354	1.52970	.091	.298	.98810	.96896	.073	.149
3	1	4	.57368	.58615	.095	.737	2.50816	1.71879	.094	.077	2.07925	3.17487	.094	.000
3	2	3	.09854	.10061	.178	1.027	.69173	.69752	.173	.177	.58173	.59086	.174	.174
3	3	3	.37682	.23103	.142	.392	.83982	.89026	.103	.188	.81212	.80595	.111	.174
3	4	3	.24982	.30125	.015	.315	.76088	.84925	.004	.131	.62883	.74447	.001	.125
3	5	2	.31059	.36212	.010	.375	1.00132	1.02309	.022	.146	.79423	.80076	.012	.132
3	6	2	.34144	.33933	.012	.390	1.18894	1.19907	.084	.181	.86142	.86760	.056	.166
3	7	2	.36641	.40271	.067	.485	1.46750	1.49867	.156	.263	.94911	.97461	.113	.226
3	8	3	.40253	.38194	.005	.362	1.83098	1.93764	.012	.158	1.00411	1.04328	.008	.160
4	1	3	.00000	.00000	.000	.000	.00000	.00100	.000	.000	.00010	.00000	.000	.000
4	2	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000[illegible]0	.00000	.000	.000
4	6	4	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000[illegible]0	.00000	.000	.000
4	7	4	1.00000	1.00000	.001	2.000	.89275	.89275	.007	2.000	.49610	.49620	.003	2.000

BIN RATIOS SUMMED OVER ANGLE, I= 8

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.34747	.37705	.056	.374	1.50091	1.24247	.060	.222	1.35740	1.44760	.062	.202
1	2	3	.28246	.24717	.063	.317	.75142	.63319	.075	.206	.904~8	.87784	.076	.178
1	3	6	.45345	.34779	.006	.157	.68332	.58745	.005	.106	.855-2	.57316	.003	.087
1	4	6	.57623	.35699	.013	.166	.41310	.37802	.010	.148	.750-2	.75341	.013	.112
1	5	3	.50740	.15703	.006	.264	.54848	.58998	.054	.210	.92253	.68408	.053	.144
1	6	3	.95539	.55826	.025	.155	.81887	.78667	.064	.214	1.32977	1.45782	.042	.125
1	7	4	1.28417	8.17046	.000	.156	1.37861	1.19418	.013	.149	1.986-3	4.15879	.009	.119
1	8	4	.93617	.77563	.144	.236	1.92969	1.94063	.181	.239	1.52999	1.30836	.147	.120
2	1	5	.66284	.69917	.075	.464	1.62378	1.85471	.071	.191	1.60451	2.08764	.072	.155
2	2	1	6.01574	6.01574	.012	.222	.24705	.24705	.014	.544	1.42101	1.42101	.013	.149
2	3	2	6.48696	6.68234	.126	.186	.58052	.58709	.127	.336	1.82502	1.86239	.127	.169
2	4	5	.52097	.33754	.004	.167	.82128	.71967	.005	.061	1.00156	.64367	.001	.061
2	5	3	.33263	.30073	.006	.239	1.16692	.92865	.019	.102	.89479	.68612	.006	.094
2	6	2	.49690	.56485	.011	.284	1.78322	1.94663	.039	.106	1.26818	1.40340	.028	.103
2	7	2	.91314	.91378	.036	.216	2.62410	2.84206	.082	.133	1.81457	1.88064	.059	.103
2	8	3	.66239	.58417	.051	.313	1.74611	1.54227	.380	.298	1.01447	.97509	.063	.149
3	1	4	.57711	.59265	.089	.737	2.60398	1.70001	.087	.077	2.34000	3.24389	.087	.000
3	2	3	.10369	.10474	.175	1.027	.72683	.72977	.170	.177	.61232	.61784	.171	.174
3	3	3	.39454	.29393	.131	.392	.79898	.84470	.092	.188	.815,8	.81176	.100	.174
3	4	3	.26580	.32138	.013	.315	.80825	.86634	.005	.131	.66847	.77103	.001	.125
3	5	2	.33681	.40070	.009	.374	1.08938	1.13483	.024	.146	.866-3	.89072	.013	.132
3	6	2	.37873	.37796	.013	.390	1.31391	1.33150	.085	.181	.95159	.96435	.057	.166
3	7	2	.40490	.44458	.070	.485	1.62469	1.65961	.156	.253	1.05198	1.07966	.114	.226
3	8	3	.42643	.39231	.002	.362	1.92797	1.99633	.009	.158	1.06282	1.07321	.005	.160
4	1	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	3	.00000	.00000	.006	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	4	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	7	4	1.00000	1.00000	.001	2.000	.97687	.97687	.006	2.000	.54295	.54295	.003	2.000

BIN RATIOS SUMMED OVER ANGLE.M= 9

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.34593	.36197	.053	.374	1.54049	1.15805	.056	.722	1.39479	1.37177	.058	.202
1	2	3	.28313	.24829	.066	.317	.74633	.62588	.078	.206	.88104	.87368	.079	.178
1	3	6	.42437	.14171	.007	.157	.54822	.46996	.003	.106	.72956	.49489	.001	.087
1	4	6	.54715	34135	011	.166	.33436	.30918	.009	.148	.64263	.64145	.010	.112
1	5	3	.48940	.17267	.012	.264	.45210	.50747	.053	.210	.84259	.66539	.053	.144
1	6	3	.89909	89408	.015	.155	.70761	.63752	.072	.214	1.18393	1.13152	.054	.125
1	7	4	1.25386	3 10267	.004	.156	1.26612	.93173	.015	.149	1.83396	3.11500	.012	.119
1	8	4	.94461	.76698	.145	.236	1.93266	1 94146	.183	.239	1.542-8	1.30383	.168	.120
2	1	5	.67233	.72203	.072	.464	1.64907	1.78263	.069	.191	1.66766	2.11470	.069	.155
2	2	1	3.56577	3.56577	.011	.222	.14644	.14644	.003	.544	.84230	.84230	.002	.149
2	3	2	4.49928	4.62537	.081	.166	.40864	.39744	.070	.336	1.27671	1.29678	.070	.169
2	4	5	.52926	.38350	.004	.167	.71258	.62190	.004	.061	.94528	.69265	.000	.061
2	5	3	.35386	.32734	.007	.239	1.24326	.99580	.018	.102	.95351	.73443	.005	.094
2	6	2	.51983	58976	.012	.264	1.85934	2.01622	.039	.106	1.32566	1.45600	.028	.103
2	7	2	.94725	.95195	.036	.216	2.74359	2.95178	.082	.133	1.86982	1.95629	.059	.103
2	8	3	.69541	.59279	.043	.313	1.82200	1.56759	.074	.298	1.045-2	.98925	.056	.149
3	1	4	.58484	.59992	080	.737	2.69396	1.69543	.084	.077	2.54864	3.26361	.084	.000
3	2	3	.10831	.10470	.173	1.027	.75856	.75944	.169	.177	.63973	.64275	.170	.174
3	3	3	.40671	.25358	.125	.392	.76252	.80416	.086	.188	.81358	.81089	.094	.174
3	4	3	.27977	.33650	.012	.315	.84982	.89541	.005	.131	.70315	.79170	.003	.125
3	5	2	.35859	.43058	.009	.375	1.16202	1.22654	.024	.146	.92585	.96533	.014	.132
3	6	2	.40882	.40995	.014	.390	1.41516	1.43879	.086	.181	1.02489	1.04284	.058	.166
3	7	2	.43612	47803	.072	.485	1.75190	1.78932	.156	.253	1.13485	1.16408	.115	.226
3	8	3	.44773	.40566	.000	.362	2.01705	2.06063	.007	.158	1.11508	1.10687	.003	.160
4	1	3	.00000	.00000	000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	3	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	4	3	.00000	.00000	.000	000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	3	.00000	.00000	000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	4	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000-0	.00000	.000	.000
4	7	4	1.00000	1.00000	.002	2.000	1.04611	1.04611	.006	2.000	.58143	.58143	.003	2.000

BIN RATIOS SUMMED OVER ANGLE, M= 10

I	J	NO	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM	R(MOD)	R(EXP)	SDE	SDM
1	1	5	.34674	.35345	.051	.374	1.57414	1.11077	.054	.222	1.42991	1.32854	.055	.202
1	2	3	.28480	.25127	.067	.317	.74661	.62841	.079	.206	.87062	.87977	.080	.178
1	3	6	.40664	.13841	.008	.157	.47264	.45894	.002	.106	.65483	.46896	.002	.087
1	4	6	.52901	.33680	.010	.166	.29064	.27617	.008	.148	.58215	.56577	.010	.112
1	5	3	.47906	.18675	.014	264	.39558	.44891	.051	.210	.79496	.65049	.052	.144
1	6	3	.86596	.80678	.017	.155	.64019	.56245	.075	.219	1.09619	1.00626	.061	.125
1	7	4	1.23374	2.47621	.006	.156	1.19692	.80272	.016	.149	1.74299	2.66494	.013	.119
1	8	4	.95597	.76642	.146	.236	1.94721	1.95444	.184	.239	1.56103	1.30915	.169	.120
2	1	5	.68100	.73787	.071	.464	1.67097	1.72808	.068	.191	1.71734	2.12458	.068	.155
2	2	1	2.61127	2.61127	.005	.222	.10724	.10724	.003	.544	.61684	.61684	.003	.149
2	3	2	3.59512	3.60665	.088	.186	.32966	.30478	.046	.336	1.02560	1.00979	.054	.169
2	4	6	.53501	.41718	063	.167	.64489	.63070	.004	.061	.90814	.73447	.000	.061
2	5	3	.37063	.34774	.008	.239	1.30341	1.04848	.017	.102	.99977	.77236	.005	.094
2	6	2	.53876	.61001	.012	.284	1.92297	2.07664	.039	.106	1.37173	1.50126	.028	.103
2	7	2	.97643	.98504	.037	.216	2.84213	3.04931	.082	.133	1.95268	2.01937	.060	.103
2	8	3	.72205	.60664	.038	.313	1.88448	1.59310	.069	.298	1.07246	1.00385	.051	.149
3	1	4	.59266	.60660	.083	.737	2.76216	1.69551	.082	.077	2.70872	3.27019	.082	.000
3	2	3	.11207	.11202	.171	1.027	.78452	.78393	.168	.177	.66207	.66336	.169	.174
3	3	3	.41950	.26087	.121	.392	.73457	.77442	.082	.188	.81028	.80884	.090	.174
3	4	3	.29104	.34939	.011	.315	.88338	.92175	.005	.131	.73113	.81191	.003	.125
3	5	2	.37575	.45325	.009	.375	1.21910	1.29824	.025	.146	.97236	1.02371	.014	.132
3	6	2	.43221	.43504	.015	.390	1.49405	1.52235	.086	.181	1.08200	1.10400	.058	.166
3	7	2	.46046	.50393	074	.465	1.85096	1.89013	.156	.253	1.19935	1.22960	.115	.226
3	8	3	.46504	.41131	.001	.362	2.09031	2.11668	.006	.158	1.15796	1.13663	.002	.160
4	1	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	2	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000 0	.00000	.000	.000
4	3	6	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.000 0	.00000	.000	.000
4	4	3	.00000	.00000	.000	.000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	5	3	.00000	.00000	.000	000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	6	4	.00000	00000	.000	000	.00000	.00000	.000	.000	.00000	.00000	.000	.000
4	7	4	1.00000	1.00000	.002	2.000	1.10047	1.10047	.006	2.000	.61164	.61164	.003	2.000

Table A3 Ratio of Measured to Model Counts in the East and West Directions as a Function of B' and L'

H= 1 E.B.L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.5988	2.0809	1.8118	0	RW	.0000	.0000	.0000
			FSD	2.0092	2.1368	2.1355		FSD	.0000	.0000	.0000
2	1	111	RE	.6297	1.8409	1.6074	0	RW	.0000	.0000	.0000
			FSD	1.7158	1.3418	1.3183		FSD	.0000	.0000	.0000
3	1	32	RE	2.1033	12.4962	10.7033	0	RW	.0000	.0000	.0000
			FSD	3.2141	2.5506	2.5422		FSD	.0000	.0000	0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.2173	.9435	.8515	0	RW	.0000	.0000	.0000
			FSD	1.0693	1.3189	1.3528		FSD	.0000	.0000	.0000
2	2	7	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1085	.7549	.6390	0	RW	.0000	.0000	.0000
			FSD	2.1272	1.1831	1.1842		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.2364	1.0105	.9645	105	RW	.0000	.0000	.0000
			FSD	1.0359	1.3217	1.3638		FSD	.4127	.5391	.4098
2	3	15	RE	.0000	.0000	.0000	67	RW	.0000	.0000	.0000
			FSD	.2843	.4133	.2428		FSD	.2573	.3695	.2069
3	3	198	RE	.1265	.5515	.4674	54	RW	.0000	.0000	.0000
			FSD	1.4912	1.0029	1.0693		FSD	.3864	.4236	.3254
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.2592	1.0649	1.3893	143	RW	.0000	.0000	.0000
			FSD	1.3549	1.6386	1.6972		FSD	.4292	.5463	.3767
2	4	44	RE	.6470	2.6250	2.0899	31	RW	.0000	.0000	.0000
			FSD	.8292	.7089	.7099		FSD	.6206	.4031	.4974
3	4	121	RE	.1883	.6564	.5404	0	RW	.0000	.0000	.0000
			FSD	1.3171	1.1074	1.1040		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.5195	2.5257	4.6558	28	RW	.0000	.0000	.0000
			FSD	2.2371	1.9133	1.9161		FSD	.3851	.4845	3588

2	5	81	RE	.3978	1.4099	1.1881	0	RW	.0000	.0000	.0000
			FSD	1.0112	.9620	.9526		FSD	.0000	.0000	.0000
3	5	74	RE	.2890	.9930	.7731	0	RW	.0000	.0000	.0000
			FSD	.8251	.5903	.5978		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	1.7878	7.0996	14.7608	29	RW	.0000	.0000	.0000
			FSD	2.3038	2.1029	2.1440		FSD	.1490	.5407	.1495
2	6	63	RE	.3904	1.3767	.9801	0	RW	.0000	.0000	.0000
			FSD	.6715	.6068	.5868		FSD	.0000	.0000	.0000
3	6	89	RE	.2074	.7253	.5254	0	RW	.0000	.0000	.0000
			FSD	.5774	.3135	.2836		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	6.4639	19.2534	51.1461	4	RW	.0000	.0000	.0000
			FSD	2.0860	1.9199	1.9438		FSD	.2135	.4121	.1856
2	7	43	RE	.7368	2.2480	1.4843	0	RW	.0000	.0000	.0000
			FSD	.8192	.7961	.7714		FSD	.0000	.0000	.0000
3	7	110	RE	.2300	.8711	.5601	0	RW	.0000	.0000	.0000
			FSD	.6694	.4526	.4184		FSD	.0000	.0000	.0000
4	7	2	RE	.0300	.5735	.3187	0	RW	.0000	.0000	.0000
			FSD	.0007	.0046	.0028		FSD	.0000	.0000	.0000
1	8	272	RE	.8637	1.9069	1.2584	0	RW	.0000	.0000	.0000
			FSD	1.1674	1.3244	1.1894		FSD	.0000	.0000	.0000
2	8	153	RE	.3971	1.1161	.6915	0	RW	.0000	.0000	.0000
			FSD	.7045	.8351	.7154		FSD	.0000	.0000	.0000
3	8	126	RE	.3040	1.1939	.7005	0	RW	.0000	.0000	.0000
			FSD	.8434	.6826	.6553		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M= 2 E,B,L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.5532	2.0483	1.6002	0	RW	.0000	.0000	.0000
			FSD	1.7241	1.9012	1.9108		FSD	.0000	.0000	.0000
2	1	111	RE	.5900	1.7330	1.5118	0	RW	.0000	.0000	.0000
			FSD	1.5919	1.1752	1.1491		FSD	.0000	.0000	.0000
3	1	32	RE	.9409	5.7235	4.8806	0	RW	.0000	.0000	.0000
			FSD	2.3224	1.2419	1.2263		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.2384	1.0285	.9273	0	RW	.0000	.0000	.0000
			FSD	1.0683	1.3710	1.3541		FSD	.0000	.0000	.0000
2	2	7	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1187	.8766	.6995	0	RW	.0000	.0000	.0000
			FSD	2.1073	1.1489	1.1497		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.2599	1.1262	1.0784	105	RW	.0000	.0000	.0000
			FSD	1.0426	1.3144	1.3568		FSD	.4127	.5391	.4098
2	3	15	RE	.0000	.0000	.0000	67	RW	.0000	.0000	.0000
			FSD	.2843	.4133	.2428		FSD	.2573	.3695	.2069
3	3	198	RE	.1329	.5803	.4917	54	RW	.0000	.0000	.0000
			FSD	1.4543	.9487	.9552		FSD	.3844	.4236	.3254
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.2868	1.1647	1.5084	143	RW	.0000	.0000	.0000
			FSD	1.3492	1.6393	1.7020		FSD	.4292	.5463	.3767
2	4	44	RE	.5299	2.1608	1.7181	31	RW	.0000	.0000	.0000
			FSD	.6246	.4686	.4660		FSD	.6206	.4031	.4974
3	4	121	RE	.1805	.6285	.5175	0	RW	.0000	.0000	.0000
			FSD	1.1286	.8724	.8690		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.5777	2.8634	5.2767	28	RW	.0000	.0000	.0000
			FSD	2.2388	1.9159	1.9194		FSD	.3851	.4845	.3588

2	5	81	RE	.3764	1.3393	1.0323	0	RW	.0000	.0000	.0000
			FSD	.7779	.7130	.7008		FSD	.0000	.0000	.0000
3	5	74	RE	.2718	.9259	.7228	0	RW	.0000	.0000	.0000
			FSD	.7301	.4532	.4601		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	1.5247	4.0865	12.7170	29	RW	.0000	.0000	.0000
			FSD	2.2494	2.0317	2.0640		FSD	.1490	.6407	.1495
2	6	63	RE	.4039	1.4104	1.0061	0	RW	.0000	.0000	.0000
			FSD	.5467	.4466	.4276		FSD	.0000	.0000	.0000
3	6	89	RE	.2285	.7993	.5789	0	RW	.0000	.0000	.0000
			FSD	.5857	.3280	.7994		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0070	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	3.2979	9.9621	26.8070	4	RW	.0000	.0000	.0000
			FSD	1.8939	1.6967	1.7140		FSD	.2135	.5121	.1856
2	7	43	RE	.7882	2.4010	1.5867	0	RW	.0000	.0000	.0000
			FSD	.7231	.6899	.6652		FSD	.0000	.0000	.0000
3	7	110	RE	.2553	.9670	.6218	0	RW	.0000	.0000	.0000
			FSD	.6715	.4559	.4218		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.6419	.3568	0	RW	.0000	.0000	.0000
			FSD	.0009	.0048	.0030		FSD	.0000	.0000	.0000
1	8	272	RE	.9191	2.0408	1.3492	0	RW	.0000	.0000	.0000
			FSD	1.0983	1.2598	1.1281		FSD	.0000	.0000	.0000
2	8	153	RE	.4312	1.2123	.7509	0	RW	.0000	.0000	.0000
			FSD	.6922	.8218	.7020		FSD	.0000	.0000	.0000
3	8	126	RE	.3230	1.2769	.7449	0	RW	.0000	.0000	.0000
			FSD	.7987	.6288	.5978		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0070	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0007

M= 3   E.B.L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	KE	.4668	1.8260	1.6170	0	RW	.0000	.0000	.0000
			FSD	1.3668	1.5461	1.5514		FSD	.0000	.0000	.0000
2	1	111	KE	.5417	1.5951	1.3908	0	RW	.0000	.0000	.0000
			FSD	1.5357	1.0932	1.0660		FSD	.0000	.0000	.0000
3	1	32	KE	.5778	3.5565	3.0259	0	RW	.0000	.0000	.0000
			FSD	2.1478	.8603	.8400		FSD	.0000	.0000	.0000
4	1	0	KE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	KE	.2592	1.1197	1.0095	0	RW	.0000	.0000	.0000
			FSD	1.0550	1.3063	1.3385		FSD	.0000	.0000	.0000
2	2	7	KE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	KE	.1149	.8016	.6781	0	RW	.0000	.0000	.0000
			FSD	1.9975	.9182	.9381		FSD	.0000	.0000	.0000
4	2	0	KE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	KE	.2825	1.2182	1.1646	105	RW	.0000	.0000	.0000
			FSD	1.0333	1.3016	1.3411		FSD	.4127	.5391	.4098
2	3	15	KE	.0000	.0000	.0000	67	RW	.0000	.0000	.0000
			FSD	.2843	.4133	.2428		FSD	.2573	.3695	.2069
3	3	198	KE	.1321	.5780	.4895	54	RW	.0000	.0000	.0000
			FSD	1.3474	.7846	.7908		FSD	.3864	.4236	.3254
4	3	0	KE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	KE	.3138	1.2378	1.5752	143	RW	.0000	.0000	.0000
			FSD	1.3365	1.6566	1.7396		FSD	.4292	.5463	.3767
2	4	44	KE	.4654	1.9018	1.5113	31	RW	.0000	.0000	.0000
			FSD	.5443	.3578	.3535		FSD	.6206	.4031	.4974
3	4	121	KE	.1769	.6140	.5060	0	RW	.0000	.0000	.0000
			FSD	.9974	.6898	.6869		FSD	.0000	.0000	.0000
4	4	0	KE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	KE	5923	2.8025	4.7084	28	RW	.0000	.0000	.0000
			FSD	2.1805	1.7433	1.5624		FSD	.3851	.4845	.3588

2	5	81	RE	.3644	1.3087	1.0076	0	RW	.0000	.0000	.0000
			FSD	.6739	.5905	.5783		FSD	.0000	.0000	.0000
3	5	74	RE	.2611	.8842	.6915	0	RW	.0000	.0000	.0000
			FSD	.6638	.3478	.3529		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	1.2126	4.1549	6.0608	29	RW	.0000	.0000	.0000
			FSD	2.0091	1.4512	1.0065		FSD	.1490	.5407	.1495
2	6	63	RE	.3977	1.3817	.9895	0	RW	.0000	.0000	.0000
			FSD	.4941	.3765	.3560		FSD	.0000	.0000	.0000
3	6	89	RE	.2452	.8575	.6212	0	RW	.0000	.0000	.0000
			FSD	.5804	.3206	.2907		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	1.8953	4.6865	5.9158	4	RW	.0000	.0000	.0000
			FSD	1.4637	.8751	.3106		FSD	.2135	.5121	.1856
2	7	43	RE	.7596	2.3047	1.5261	0	RW	.0000	.0000	.0000
			FSD	.5734	.5255	.4961		FSD	.0000	.0000	.0000
3	7	110	RE	.2809	1.0639	.6842	0	RW	.0000	.0000	.0000
			FSD	.6683	.4521	.4172		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.6879	.3823	0	RW	.0000	.0000	.0000
			FSD	.0006	.0046	.0028		FSD	.0000	.0000	.0000
1	8	272	RE	.9174	2.0312	1.3526	0	RW	.0000	.0000	.0000
			FSD	.9383	1.0950	.9657		FSD	.0000	.0000	.0000
2	8	153	RE	.4653	1.3080	.8103	0	RW	.0000	.0000	.0000
			FSD	.6751	.8071	.6850		FSD	.0000	.0000	.0000
3	8	126	RE	.3441	1.3557	.7941	0	RW	.0000	.0000	.0000
			FSD	.7625	.5826	.5487		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M# 4 E,B,L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.4041	1.6312	1.4500	0	RW	.0000	.0000	.0000
			FSD	1.1803	1.3002	1.2957		FSD	.0000	.0000	.0000
2	1	111	RE	.5076	1.5084	1.3157	0	RW	.0000	.0000	.0000
			FSD	1.5057	1.1596	1.0331		FSD	.0000	.0000	.0000
3	1	32	RE	.4490	2.7782	2.3613	0	RW	.0000	.0000	.0000
			FSD	2.1019	.7335	.7106		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.2715	1.1674	1.0506	0	RW	.0000	.0000	.0000
			FSD	.9916	1.2171	1.2406		FSD	.0000	.0000	.0000
2	2	7	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1077	.7519	.6359	0	RW	.0000	.0000	.0000
			FSD	1.9137	.7465	.7459		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3014	1.2602	1.1953	105	RW	.0000	.0000	.0000
			FSD	.9932	1.2630	1.2921		FSD	.4127	.5391	.4098
2	3	15	RE	.0000	.0000	.0000	67	RW	.0000	.0000	.0000
			FSD	.2843	.4133	.2428		FSD	.2573	.3695	.2069
3	3	198	RE	.1341	.5874	.4974	54	RW	.0000	.0000	.0000
			FSD	1.2745	.6595	.6654		FSD	.3864	.4236	.3254
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.3251	1.1916	1.4470	143	RW	69.8980	10.0779	25.8303
			FSD	1.2758	1.5766	1.6012		FSD	1.6181	1.4508	1.6033
2	4	44	RE	.4335	1.7732	1.4087	31	RW	161.6726	11.1916	50.9516
			FSD	.5177	.3154	.3106		FSD	7.2439	2.1936	2.2129
3	4	121	RE	.1786	.6194	.5106	0	RW	.0000	.0000	.0000
			FSD	.9189	.5670	.5644		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.4879	1.6925	1.9796	28	RW	.0000	.0000	.0000
			FSD	1.8126	.8459	.4139		FSD	.3861	.4845	.3588

2	5	81	RE	.3604	1.2903	.9924	0	RW	.0000	.0000	.0000
			FSD	.6266	.5304	.5187		FSD	.0000	.0000	.0000
3	5	74	RE	.2592	8739	.6844	0	RW	.0000	.0000	.0000
			FSD	.6246	.2790	.2811		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.8123	2.1182	2.0902	29	RW	.0000	.0000	.0000
			FSD	1.5103	.6188	.3233		FSD	.1490	.5407	.1495
2	6	63	RE	.3695	1.3498	.9677	0	RW	.0000	.0000	.0000
			FSD	.4715	.3463	.3241		FSD	.0000	.0000	.0000
3	6	89	RE	.2617	.9143	.6626	0	RW	.0000	.0000	.0000
			FSD	.5713	.3057	.2734		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	1.2508	2.6690	2.5889	4	RW	.0000	.0000	.0000
			FSD	1.1773	.4531	.3867		FSD	.2135	.5121	.1856
2	7	43	RE	.7391	2.2362	1.4828	0	RW	.0000	.0000	.0000
			FSD	.4956	.4397	.4043		FSD	.0000	.0000	.0000
3	7	110	RE	.3059	1.1584	.7450	0	RW	.0000	.0000	.0000
			FSD	.6630	.4447	.4090		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.7220	.4013	0	RW	.0000	.0000	.0000
			FSD	.0002	.0742	.0025		FSD	.0000	.0000	.0000
1	8	272	RE	.9060	1.9904	1.3362	0	RW	.0000	.0000	.0000
			FSD	.8161	.9718	.8380		FSD	.0000	.0000	.0000
2	8	153	RE	.5029	1.4127	.8756	0	RW	.0000	.0000	.0000
			FSD	.6627	.7985	.6736		FSD	.0000	.0000	.0000
3	8	126	RE	.3651	1.4401	.8430	0	RW	.0000	.0000	.0000
			FSD	.7357	.5470	.5109		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	0000	0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M= 5   E,B,C RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.3679	1.5147	1.3496	0	RW	.0000	.0000	.0000
			FSD	1.0727	1.1651	1.1535		FSD	.0000	.0000	.0000
2	1	111	RE	.4848	1.4666	1.2811	0	RW	.0000	.0000	.0000
			FSD	1.4767	1.0390	1.0145		FSD	.0000	.0000	.0000
3	1	32	RE	.3865	2.4143	2.0511	0	RW	.0000	.0000	.0000
			FSD	2.0823	.6756	.6514		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.2800	1.1923	1.0699	0	RW	.0000	.0000	.0000
			FSD	.9174	1.1143	1.1273		FSD	.0000	.0000	.0000
2	2	7	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1036	.7241	.6123	0	RW	.0000	.0000	.0000
			FSD	1.8690	.6246	.6236		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3156	1.2661	1.1887	105	RW	47.2451	5.0345	15.1527
			FSD	.9311	1.1990	1.2126		FSD	.9697	1.0156	.9568
2	3	15	RE	.0000	.0000	.0000	67	RW	150.3506	15.7679	45.5786
			FSD	.2843	.4133	.2428		FSD	1.2412	1.2644	1.2278
3	3	198	RE	.1380	.6843	.5118	54	RW	.0000	.0000	.0000
			FSD	1.2266	.5673	.5731		FSD	.3864	.4236	.3254
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.3230	1.0636	1.2147	143	RW	11.4122	1.6081	4.1464
			FSD	1.1717	1.4419	1.3647		FSD	.7422	.8057	.7047
2	4	44	RE	.4197	1.7181	1.3647	31	RW	23.3085	1.6170	7.3573
			FSD	.5083	.2985	.2938		FSD	1.3414	1.2560	1.2893
3	4	121	RE	.1834	.6354	.5239	0	RW	.0000	.0000	.0000
			FSD	.8685	.4789	.4764		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.4028	1.1470	1.1686	28	RW	.0000	.0000	.0000
			FSD	1.5537	4553	.2703		FSD	.3851	.4845	.3588

2	5	81	RE	.3611	1.2952	.9958	0	RW	.0000	.0000	.0000
			FSD	.6033	.4987	.4877		FSD	.0000	.0000	.0000
3	5	74	RE	.2625	.8827	.6919	0	RW	.0000	.0000	.0000
			FSD	.6036	.2406	.2391		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.6177	1.4208	1.2538	29	RW	.0000	.0000	.0000
			FSD	1.2915	.3850	.3702		FSD	.1490	.5407	.1495
2	6	63	RE	.3884	1.3435	.9638	0	RW	.0000	.0000	.0000
			FSD	.4601	.3319	.3382		FSD	.0000	.0000	.0000
3	6	89	RE	.2798	.9767	.7080	0	RW	.0000	.0000	.0000
			FSD	.5654	.2966	.2622		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	.9728	1.9369	1.7124	4	RW	.0000	.0000	.0000
			FSD	1.0612	.3436	.4657		FSD	.2135	.5121	.1856
2	7	43	RE	.7345	2.2181	1.4722	0	RW	.0000	.0000	.0000
			FSD	.4506	.3900	.3489		FSD	.0000	.0000	.0000
3	7	110	RE	.3325	1.2589	.8097	0	RW	.0000	.0000	.0000
			FSD	.6586	.4385	.4020		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.7590	.4219	0	RW	.0000	.0000	.0000
			FSD	.0000	.0039	.0021		FSD	.0000	.0000	.0000
1	8	272	RE	.9065	1.9776	1.3363	0	RW	.0000	.0000	.0000
			FSD	.7413	.9000	.7594		FSD	.0000	.0000	.0000
2	8	153	RE	.5447	1.5277	.9471	0	RW	.0000	.0000	.0000
			FSD	.6546	.7939	.6667		FSD	.0000	.0000	.0000
3	8	126	RE	.3885	1.5334	.8972	0	RW	.0000	.0000	.0000
			FSD	.7166	.5204	.4827		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M= 4 E,H,L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.3481	1.4618	1.2954	0	RW	.0000	.0000	.0000
			FSD	1.0159	1.0934	1.0780		FSD	.0000	.0000	.0000
2	1	111	RE	.4728	1.4498	1.2773	0	RW	.0000	.0000	.0000
			FSD	1.4510	1.0237	1.0016		FSD	.0000	.0000	.0000
3	1	32	RE	.3575	2.2306	1.8946	0	RW	.0000	.0000	.0000
			FSD	2.0712	.6432	.6186		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.2873	1.2084	1.0809	0	RW	.0000	.0000	.0000
			FSD	.8535	1.0302	1.0342		FSD	.0000	.0000	.0000
2	2	7	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1020	.7137	.6034	0	RW	.0000	.0000	.0000
			FSD	1.8445	.5476	.5464		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3277	1.2657	1.1777	105	RW	16.6423	1.7599	5.3065
			FSD	.8713	1.1421	1.1429		FSD	.7924	.8521	.7800
2	3	15	RE	.0000	.0000	.0000	67	RW	32.4659	3.2956	9.5943
			FSD	.2843	.4133	.2428		FSD	.5019	.5376	.4495
3	3	198	RE	.1429	.6757	.5299	54	RW	66.5025	7.9345	19.1823
			FSD	1.1963	.5030	.5087		FSD	.5926	.5925	.5321
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0300	.0000
1	4	121	RE	.3198	.9618	1.0584	143	RW	5.4523	.7663	1.9771
			FSD	1.0812	1.3595	1.2635		FSD	.6947	.7664	.6581
2	4	44	RE	.4180	1.7117	1.3594	31	RW	11.6550	.8087	3.6794
			FSD	.5354	.2925	.2879		FSD	1.3318	1.2453	1.2790
3	4	121	RE	.1900	.6579	.5426	0	RW	.0000	.0000	.0000
			FSD	.8364	.4167	.4142		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.3476	.8810	.8430	28	RW	298.7222	17.1516	105.6590
			FSD	1.4070	3304	.3320		FSD	1.9642	1.9818	1.9561

2	5	81	RE	.3677	1.3706	1.0149	0	RW	.0000	.0000	.0000
			FSD	.5918	.4819	.4715		FSD	.0000	.0000	.0000
3	5	74	RE	.2698	.9750	.7098	0	RW	.0000	.0000	.0000
			FSD	.5936	.2240	.2191		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.5173	1.1125	.9346	29	RW	117.1486	10.3573	56.0195
			FSD	1.1926	.3357	.4182		FSD	.7139	.8794	.7105
2	6	63	RE	.3944	1.3629	.9782	0	RW	.0000	.0000	.0000
			FSD	.4538	.3248	.2999		FSD	.0000	.0000	.0000
3	6	89	RE	.2994	1.0443	.7572	0	RW	.0000	.0000	.0000
			FSD	.5628	.2934	.2577		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	.8344	1.5973	1.3483	4	RW	92.6496	10.1541	48.6903
			FSD	1.0072	.3277	.5065		FSD	.2154	.5124	.1870
2	7	43	RE	.7437	2.2429	1.4897	0	RW	.0000	.0000	.0000
			FSD	.4232	.3595	.3138		FSD	.0000	.0000	.0000
3	7	110	RE	.3603	1.3643	.8774	0	RW	.0000	.0000	.0000
			FSD	.6556	.4343	.3973		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.8015	.4455	0	RW	.0000	.0000	.0000
			FSD	.0003	.0037	.0019		FSD	.0000	.0000	.0000
1	8	272	RE	.9175	1.9909	1.3515	0	RW	.0000	.0000	.0000
			FSD	.6988	.8615	.7152		FSD	.0000	.0000	.0000
2	8	153	RE	.5876	1.6486	1.0225	0	RW	.0000	.0000	.0000
			FSD	.6499	.7917	.6628		FSD	.0000	.0000	.0000
3	8	126	RE	.4139	1.6349	.9562	0	RW	.0000	.0000	.0000
			FSD	.7037	.5018	.4629		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M= 7   E.B.L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.3342	1.4146	1.2641	0	RW	.0000	.0000	.0000
			FSD	9683	1.0372	1.0197		FSD	.0000	.0000	.0000
2	1	111	RE	.4673	1.5016	1.3186	0	RW	.0000	.0000	.0000
			FSD	1.4122	1.0012	.9837		FSD	.0000	.0000	.0000
3	1	32	RE	.3341	2.0994	1.7834	0	RW	.0000	.0000	.0000
			FSD	2.0583	.6080	.5830		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.3005	1.2349	1.0986	0	RW	.0000	.0000	.0000
			FSD	.7721	.9339	.9271		FSD	.0000	.0000	.0000
2	2	7	RE	15.9072	.6532	3.7574	0	RW	.0000	.0000	.0000
			FSD	.2248	.5459	.1541		FSD	.0000	.0000	.0000
3	2	165	RE	.1032	.7224	.6107	0	RW	.0000	.0000	.0000
			FSD	1.8231	.4707	.4693		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3476	1.2677	1.1644	105	RW	5.7959	.6098	1.8410
			FSD	.7834	1.0716	1.0568		FSD	.6069	.6879	.5949
2	3	15	RE	22.2330	1.1764	5.7071	67	RW	10.1377	1.0247	2.9858
			FSD	.3077	.4216	.2591		FSD	.3957	.4521	.3393
3	3	198	RE	.1539	.6738	.5706	54	RW	16.7064	1.9836	4.8060
			FSD	1.1664	.4329	.4384		FSD	.5045	.5118	4388
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.3165	.8433	.8744	143	RW	2.4339	.3433	.8849
			FSD	.9662	1.3004	1.1828		FSD	.5714	.6683	5369
2	4	44	RE	.4327	1.7731	1.4080	31	RW	5.0572	.3524	1.6016
			FSD	.5055	.2907	.2867		FSD	1.0486	.9422	.9848
3	4	121	RE	.2056	.7113	.5866	0	RW	.0000	.0000	.0000
			FSD	.8028	.3444	.3415		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.2915	.6568	.5961	28	RW	16.1669	9875	6.9638
			FSD	1.2839	.3336	.4161		FSD	.4300	.5432	.4237

2	5	81	RE	.3902	1.4033	1.3779	0	RW	.0000	.0000	.0000
			FSD	.5837	.4690	.4593		FSD	.0000	.0000	.0000
3	5	74	RE	.2698	.9696	.7613	0	RW	.0000	.0000	.0000
			FSD	.5674	.2190	.2163		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.4290	.8631	.6946	29	RW	17.8899	1.4980	8.2896
			FSD	1.1186	.3537	.4672		FSD	.1677	.5428	.1544
2	6	63	RE	.4182	1.4428	1.0362	0	RW	.0000	.0000	.0000
			FSD	.4482	.3201	.2935		FSD	.0000	.0000	.0000
3	6	89	RE	.3389	1.1813	.8568	0	RW	.0000	.0000	.0000
			FSD	.5620	.2948	.2579		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	.7180	1.3185	1.0640	4	RW	19.2866	2.1132	10.1345
			FSD	.9638	.3498	.5461		FSD	.2136	.5121	.1856
2	7	43	RE	.7842	2.3610	1.5695	0	RW	.0000	.0000	.0000
			FSD	.3956	.3290	.2771		FSD	.0000	.0000	.0000
3	7	110	RE	.4149	1.5712	1.0105	0	RW	.0000	.0000	.0000
			FSD	.6524	.4299	.3922		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.8928	.4962	0	RW	.0000	.0000	.0000
			FSD	.0006	.0034	.0016		FSD	.0000	.0000	.0000
1	8	272	RE	.9576	2.0612	1.4086	0	RW	.0000	.0000	.0000
			FSD	.6670	.8357	.6828		FSD	.0000	.0000	.0000
2	8	153	RE	.6726	1.8858	1.1701	0	RW	.0000	.0000	.0000
			FSD	.6457	.7903	.6597		FSD	.0000	.0000	.0000
3	8	126	RE	.4656	1.8411	1.1763	0	RW	.0000	.0000	.0000
			FSD	.6894	.4803	.4403		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M= 8 E.B.L RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.3348	1.4276	1.2767	0	RW	.0000	.0000	.0000
			FSD	.9528	1.0230	1.0059		FSD	.0000	.0000	.0000
2	1	111	RE	.4724	1.5664	1.3797	0	RW	.0000	.0000	.0000
			FSD	1.3889	.9858	.9718		FSD	.0000	.0000	.0000
3	1	32	RE	.3306	2.0896	1.7754	0	RW	.0000	.0000	.0000
			FSD	2.0511	.5895	.5646		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.3122	1.2617	1.1163	0	RW	.0000	.0000	.0000
			FSD	.7357	.8984	.8875		FSD	.0000	.0000	.0000
2	2	7	RE	6.0157	.2471	1.4210	0	RW	.0000	.0000	.0000
			FSD	.2219	.5446	.1497		FSD	.0000	.0000	.0000
3	2	165	RE	.1065	.7459	.6305	0	RW	.0000	.0000	.0000
			FSD	1.8158	.4418	.4402		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3632	1.2772	1.1641	105	RW	3.4898	.3664	1.1066
			FSD	.7355	1.0431	1.0214		FSD	.5221	.6171	.5106
2	3	15	RE	7.7813	.4114	1.9962	67	RW	5.8689	.5924	1.7267
			FSD	.2992	.4172	.2513		FSD	.3607	.4262	.3027
3	3	198	RE	.1644	.7198	.6095	54	RW	8.7585	1.0383	2.5133
			FSD	1.1549	.4038	.4092		FSD	.4800	.4905	.4131
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.3176	.7906	.7991	143	RW	1.6508	.2334	.6013
			FSD	.9129	1.2932	1.1722		FSD	.5122	.6215	.4764
2	4	44	RE	.4548	1.8643	1.4803	31	RW	3.2117	.2243	1.0187
			FSD	.5069	.2921	.2884		FSD	.8589	.7240	.7787
3	4	121	RE	.2207	.7633	.6296	0	RW	.0000	.0000	.0000
			FSD	.7882	.3096	.3061		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.2686	.5738	.5099	28	RW	6.9947	.4280	2.5831
			FSD	1.2442	.3707	.4533		FSD	.4054	.5190	.3944

2	5	81	RE	.4150	1.4935	1.1470	0	RW	.0000	.0000	.0000
			FSD	.5826	.4662	.4569		FSD	.0000	.0000	.0000
3	5	74	RE	.3106	1.0379	.8150	0	RW	.0000	.0000	.0000
			FSD	.5868	.2234	.2129		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.3972	.7747	.6124	29	RW	8.4358	.7032	3.8988
			FSD	1.0957	.3803	.4895		FSD	.1519	.5462	.1544
2	6	63	RE	.4453	1.5346	1.1026	0	RW	.0000	.0000	.0000
			FSD	.4464	.3199	.2923		FSD	.0000	.0000	.0000
3	6	89	RE	.3741	1.3034	.9455	0	RW	.0000	.0000	.0000
			FSD	.5628	.2980	.2608		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	.6805	1.2243	.9677	4	RW	9.5909	1.0508	5.0395
			FSD	.9490	.3724	.5643		FSD	.2135	.5122	.1856
2	7	43	RE	.8315	2.5011	1.6633	0	RW	.0000	.0000	.0000
			FSD	.3843	.3167	.2617		FSD	.0000	.0000	.0000
3	7	110	RE	.4625	1.7513	1.1263	0	RW	.0000	.0000	.0000
			FSD	.6509	.4280	.3899		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	.9769	.5430	0	RW	.0000	.0000	.0000
			FSD	.0007	.0032	.0015		FSD	.0000	.0000	.0000
1	8	272	RE	1.0039	2.1508	1.4752	0	RW	.0000	.0000	.0000
			FSD	.6630	.8349	.6797		FSD	.0000	.0000	.0000
2	8	153	RE	.7466	2.0924	1.2985	0	RW	.0000	.0000	.0000
			FSD	.6446	.7905	.6591		FSD	.0000	.0000	.0000
3	8	126	RE	.5119	2.0250	1.1834	0	RW	.0000	.0000	.0000
			FSD	.6828	.4698	.4294		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

M= 9 E.B.L RATIOS OF OBSERVED TO VETTE

I	J	NO		19-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.3394	1.4435	1.3003	0	RW	.0000	.0000	.0000
			FSD	.9470	1.0201	1.0038		FSD	.0000	.0000	.0000
2	1	111	RE	.4797	1.6276	1.4369	0	RW	.0000	.0000	.0000
			FSD	1.3755	.9753	.9638		FSD	.0000	.0000	.0000
3	1	32	RE	.3329	2.1137	1.7962	0	RW	.0000	.0000	.0000
			FSD	2.0467	.5785	.5539		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.3220	1.2867	1.1377	0	RW	.0000	.0000	.0000
			FSD	.7206	.8873	.8748		FSD	.0000	.0000	.0000
2	2	7	RE	3.5658	.1464	.8423	0	RW	.0000	.0000	.0000
			FSD	.2215	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1099	.7713	.6511	0	RW	.0000	.0000	.0000
			FSD	1.8130	.4304	.4288		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3752	1.2891	1.1693	105	RW	2.6218	.2748	.8304
			FSD	.7109	1.0331	1.0082		FSD	.4748	.5796	.4641
2	3	15	RE	4.4615	.2358	1.1443	67	RW	4.3561	.4394	1.2810
			FSD	.2970	.4162	.2496		FSD	.3442	.4144	.2851
3	3	198	RE	.1732	.7583	.6421	54	RW	6.1581	.7295	1.7661
			FSD	1.1500	.3913	.3966		FSD	.4693	.4814	.4019
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.3205	.7667	.7643	143	RW	1.3285	.1882	.4846
			FSD	.8887	1.2969	1.1754		FSD	.4771	.5933	.4387
2	4	44	RE	.4756	1.9499	1.5481	31	RW	2.4253	.1696	.7700
			FSD	.5082	.2935	.2900		FSD	.7494	.5876	.6543
3	4	121	RE	.2335	.8071	.6658	0	RW	.0000	.0000	.0000
			FSD	.7809	.2916	.2877		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.2585	.5368	.4720	28	RW	4.4381	.2718	1.6399
			FSD	1.2291	.3954	.4723		FSD	.3967	.5098	.3833

2	5	81	RE	.4367	1.5724	1.2073	0	RW	.0000	.0000	.0000
			FSD	.5831	.4661	.4570		FSD	.0000	.0000	.0000
3	5	74	RE	.3284	1.0965	.8613	0	RW	.0000	.0000	.0000
			FSD	.5872	.2280	.2165		FSD	.0000	.0000	.0000
4	5	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	0000	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.3845	.7375	.5776	29	RW	5.6010	4659	2.5853
			FSD	1.0870	.3981	.5615		FSD	.1495	.5495	.1603
2	6	63	RE	.4692	1.6159	1.1613	0	RW	.0000	.0000	.0000
			FSD	.4458	.3207	.2924		FSD	.0000	.0000	.0000
3	6	89	RE	.4027	1.4025	1.0175	0	RW	.0000	.0000	.0000
			FSD	.5637	.3808	.2634		FSD	.0000	.0000	.0000
4	6	0	RE	0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	.6686	1.1892	.9295	4	RW	6.5850	.7215	3.4610
			FSD	.9429	.3876	.5741		FSD	.2135	.5142	.1857
2	7	43	RE	.8734	2.6262	1.7470	0	RW	.0000	.0000	.0000
			FSD	.3791	.3113	.2547		FSD	.0000	.0000	.0000
3	7	110	RE	.5008	1.8961	1.2195	0	RW	.0000	.0000	'0000
			FSD	.6501	.4271	.3687		FSD	.0000	.0000	.0000
4	7	7	RE	.0000	1 0461	.5814	0	RW	.0000	.0000	.0000
			FSD	0008	.0031	.0014		FSD	.0000	.0000	.0000
1	8	272	RE	1.0454	2.2134	1.5352	0	RW	.0000	.0000	.0000
			FSD	.6659	.8197	.6838		FSD	.0000	.0000	.0000
2	8	153	RE	.8060	2.2584	1.4017	0	RW	.0000	.0000	.0000
			FSD	.6445	.7909	.6592		FSD	.0000	.0000	.0000
3	8	126	RE	.5495	2.1745	1.2706	0	RW	.0000	.0000	.0000
			FSD	.6794	4641	.4236		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000

H=10 E.B.C RATIOS OF OBSERVED TO VETTE

I	J	NO		18-27	27-400	18-400	NO		18-27	27-400	18-400
1	1	331	RE	.3446	1.4793	1.3238	0	RW	.0000	.0000	.0000
			FSD	.9447	1.1204	1.0047		FSD	.0000	.0000	.0000
2	1	111	RE	.4866	1.6784	1.4847	0	RW	.0000	.0000	.0000
			FSD	1.3676	.9679	.9582		FSD	.0000	.0000	.0000
3	1	32	RE	.3366	2.1437	1.8220	0	RW	.0000	.0000	.0000
			FSD	2.0438	.5715	.5470		FSD	.0000	.0000	.0000
4	1	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	2	270	RE	.3298	1.3079	1.1545	0	RW	.0000	.0000	.0000
			FSD	.7145	.8850	.6718		FSD	.0000	.0000	.0000
2	2	7	RE	2.6113	.1072	.6168	0	RW	.0000	.0000	.0000
			FSD	.2216	.5444	.1491		FSD	.0000	.0000	.0000
3	2	165	RE	.1129	.7913	.6688	0	RW	.0000	.0000	.0000
			FSD	1.8119	.4256	.4240		FSD	.0000	.0000	.0000
4	2	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	3	215	RE	.3842	1.3002	1.1758	165	RW	2.2002	.2304	.6964
			FSD	.6981	1.0303	1.0038		FSD	.4497	.5608	.4398
2	3	15	RE	3.2112	.1697	.8236	67	RW	3.6426	.3673	1.0709
			FSD	.2962	.4159	.2488		FSD	.3354	.4080	.2755
3	3	198	RE	.1802	.7888	.6680	54	RW	4.9826	.5900	1.4286
			FSD	1.1477	.3856	.3908		FSD	.4636	.4765	.3960
4	3	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	4	121	RE	.3236	.7563	.7467	143	RW	1.1639	.1651	.4250
			FSD	.8770	1.3121	1.1804		FSD	.4573	.5769	.4164
2	4	44	RE	.4929	2.0208	1.6043	31	RW	2.0278	.1416	.6426
			FSD	.5091	.2946	.2913		FSD	.6926	.5111	.5869
3	4	121	RE	.2436	.8419	.6946	0	RW	.0000	.0000	.0000
			FSD	.7769	.2814	.2771		FSD	.0000	.0000	.0000
4	4	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000
1	5	63	RE	.2536	.5180	.4528	28	RW	3.3775	.2069	1.2484
			FSD	1.2224	.4110	.4832		FSD	.3928	.5054	.3781

2	5	81	RE	.4542	1.6359	1.2560	0	RW	.0000	.0000	.0000
			FSD	.5839	4666	.4577		FSD	.0000	.0000	.0000
3	5	74	RE	3427	1 1435	.8963	0	RW	.0000	0000	.0000
			FSD	.5878	.2315	.2196		FSD	.0000	0000	.0000
4	5	1	RE	.0330	.0300	.0000	0	RW	.0000	.0000	.0000
			FSD	.0330	.0300	.0000		FSD	.0000	.0000	.0000
1	6	56	RE	.3791	.7199	.5608	29	RW	4.3778	.3637	2.0192
			FSD	1.0831	.4397	.5087		FSD	.1497	.5519	.1650
2	6	63	RE	.4845	1.6417	1.2088	0	RW	.0000	.0000	.0000
			FSD	.4456	.3215	.2929		FSD	.0000	.0000	.0000
3	6	89	RE	.4250	1.4798	1.0737	0	RW	.0000	.0000	.0000
			FSD	.5644	.3728	.2654		FSD	.0000	.0000	.0000
4	6	0	RE	.0000	.0001	.0000	0	RW	.0000	.0000	.0000
			FSD	.0101	.0001	.0000		FSD	.0000	.0000	.0000
1	7	57	RE	.6658	1.1758	.9129	4	RW	5.2589	.5762	2.7632
			FSD	.9399	.3976	.5800		FSD	.2136	.5123	.1858
2	7	43	RE	.9077	2.7279	1.8150	0	RW	.0000	.0000	.0000
			FSD	.3765	.3187	.2511		FSD	.0000	.0000	.0000
3	7	110	RE	.5304	2.0085	1.2918	0	RW	.0000	.0000	.0000
			FSD	.6497	.4265	.3680		FSD	.0000	.0000	.0000
4	7	2	RE	.0000	1.1005	.6116	0	RW	.0000	.0000	.0000
			FSD	.0009	.0331	.0013		FSD	.0000	.0000	.0000
1	8	272	RE	1.0793	2.3015	1.5842	0	RW	.0000	.0000	.0000
			FSD	.6699	.8447	.6887		FSD	.0000	.0000	.0000
2	8	153	RE	.8521	2.3872	1.4818	0	RW	.0000	.0000	.0000
			FSD	.6446	.7914	.6595		FSD	.0000	.0000	.0000
3	8	126	RE	.5788	2.2912	1.3386	0	RW	.0000	.0000	.0000
			FSD	.6774	.4608	.4203		FSD	.0000	.0000	.0000
4	8	0	RE	.0000	.0000	.0000	0	RW	.0000	.0000	.0000
			FSD	.0000	.0000	.0000		FSD	.0000	.0000	.0000