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ANGULAR SCATTERING FUNCTIONS FOR SPHERICAL WATER DROPLETS

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ABSTRACT

Tables and graphs are presented which give the angular distribution of scattered light from spherical particles having a refractive index 1.33 (e.g., water droplets in air). The 50 particle sizes include the size parameters 1(1)20, 22(2)50, 55(5)125, and the scattering angles 0°(0.2°)180° in the graphs and 0°(2°)180° in the tables. The computational procedure is given in detail, and the FORTRAN programs are listed.

PROBLEM STATUS

This report completes one phase of the problem; work on other aspects of the problem is continuing.

AUTHORIZATION

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ANGULAR SCATTERING FUNCTIONS FOR SPHERICAL WATER DROPLETS

INTRODUCTION

This report presents tables and graphs which describe the angular distribution of electromagnetic radiation scattered from spherical particles of refractive index 1.33 (e.g., water droplets in air). For incident light of wavelength 0.63 μm (e.g., He-Ne laser) the range of particle size (radius) covered here is approximately 0.1 to 12.5 μm. Droplets in this range (and larger) are commonly found in natural haze, fog, and clouds.

The data presented here are a portion of the results of extensive calculations made at NRL during an investigation (1) of the theoretical aspects of indirect, optical measurement of parameters describing the microstructure of fog and clouds. Some of the data presented here can be found in earlier works,* but the combination of (a) size range, (b) resolution in scattering angle, and (c) inclusion of computer program listings are not, to the knowledge of the author, to be found elsewhere.

Since each investigation requiring data on light scattering usually involves an index of refraction, a particle size range, or an angular interval not covered by published data, it seemed practical to limit the scope of the tabulated data and graphs and to supplement this with the listings of rather simple computer programs, in FORTRAN, by which more detailed computations could be made for any particular application.

The purposes of this report are to provide the reader with a simplified but moderately detailed view of the nature of light scattering from spherical particles, and to present a convenient means by which further details can be obtained.

THEORY

If a beam of light, or other electromagnetic radiation, of wavelength λ and flux density I_0 (e.g., μW/cm^2) is incident on a spherical particle of radius r and refractive index m, then the total flux scattered over all directions is

$$E = I_0\ C(m,\lambda,r) = I_0\ Q(m,\lambda,r)\ \pi r^2\ \mu W,$$

where C is the scattering cross section of the particle, at wavelength λ and Q, the scattering efficiency factor, is the ratio of the scattering cross section to the geometric cross section (πr^2) of the scattering particle. If the incident beam is polarized with the electric vector perpendicular to the plane of scattering (that plane which includes both the incident and emergent propagation vectors), the intensity $I(\theta)$ in μW/sr scattered at an angle θ as measured from the direction of the incident beam, is

$$I(\theta) = \frac{\lambda^2}{4\pi^2}\ I_0\ i_1(\theta)\ . \tag{1}$$

*See Ref. 2, pp. 167-171, for a description of published data.

where $i_1(\theta)$ is the Mie (3) intensity function for the perpendicular component of polarization. For incident light polarized with the electric vector parallel to the scattering plane, Eq. (1) would contain $i_2(\theta)$, the Mie intensity function for the parallel component of polarization. In the case of incident natural (unpolarized) light, the expression for $I(\theta)$ becomes

$$I(\theta) = \frac{\lambda^2}{8\pi^2} [i_1(\theta) + i_2(\theta)] . \tag{2}$$

For a specified index of refraction, the scattering characteristics of a given spherical particle depend on the size of the particle relative to the incident wavelength. This is expressed as the size parameter $x = 2\pi r/\lambda$. In the following section, it will be seen that the parameters x and y ($= mx$) are the arguments of the functions from which i_1, i_2, and Q are eventually derived.

For a complete discussion of the Mie theory of light scattering, one should consult a text such as those given in Refs. 2, 4, and 5.

COMPUTATIONAL PROCEDURE

The basic set of coefficients from which i_1, i_2, and Q are obtained are

$$a_n = \frac{\Psi_n'(y)\Psi_n(x) - m\Psi_n'(y)\Psi_n'(x)}{\Psi_n'(y)\zeta_n(x) - m\Psi_n(y)\zeta_n'(x)} \tag{3a}$$

and

$$b_n = \frac{m\Psi_n'(y)\Psi_n(x) - \Psi_n(y)\Psi_n'(x)}{m\Psi_n'(y)\zeta_n(x) - \Psi_n(y)\zeta_n'(x)} , \tag{3b}$$

where Ψ_n and ζ_n are Ricatti-Bessel functions (after the notation used by van de Hulst, Ref. 2). Making the substitution $\Psi_n = S_n$ and $\zeta_n = S_n + iC_n$ (where $i = \sqrt{-1}$), the expressions for a_n and b_n become

$$a_n = \frac{S_n'(y)S_n(x) - mS_n(y)S_n'(x)}{S_n'(y)[S_n(x) + iC_n(x)] - mS_n(y)[S_n'(x) + iC_n'(x)]} \tag{4a}$$

and

$$b_n = \frac{mS_n'(y)S_n(x) - S_n(y)S_n'(x)}{mS_n'(y)[S_n(x) + iC_n(x)] - S_n(y)[S_n'(x) + iC_n'(x)]} . \tag{4b}$$

The functions C_n and S_n in terms of fractional-order Bessel functions of the first kind are

$$C_n(x) = (-1)^n \left(\frac{\pi x}{2}\right)^{1/2} J_{-n-(1/2)}(x) .$$

and

$$S_n(x) = \left(\frac{\pi x}{2}\right)^{1/2} J_{n+(1/2)}(x) .$$

Dividing both numerator and denominator of Eqs. (4a) and (4b) by the product $S_n(x)\ S_n(y)$, and using the definitions

$$\mathrm{SPSX}_n \equiv S_n'(x)/S_n(x)\ , \quad \mathrm{SPSY}_n \equiv S_n'(y)/S_n(y)\ ,$$

$$\mathrm{CNSN}_n \equiv C_n(x)/S_n(x)\ , \quad \mathrm{CPCX}_n \equiv C_n'(x)/C_n(x)\ ,$$

with some rearrangement, we derive

$$a_n = \left\{1 + \left[\frac{\mathrm{CNSN}_n(\mathrm{SPSY}_n - m\ \mathrm{CPCX}_n)}{\mathrm{SPSY}_n - m\ \mathrm{SPSX}_n}\right]\right\}^{-1} \tag{5a}$$

and

$$b_n = \left\{1 + \left[\frac{\mathrm{CNSN}_n(m\ \mathrm{SPSY}_n - \mathrm{CPCX}_n)}{m\ \mathrm{SPSY}_n - \mathrm{SPSX}_n}\right]\right\}^{-1} . \tag{5b}$$

The ratios (CNSN_n, CPCX_n, SPSX_n, SPSY_n) were computed for $n = 1, 2, 3, \ldots, N$ using upward recurrence relations which follow from the well-known recurrence formula for Bessel functions (6),

$$J_{\nu-1}(x) + J_{\nu+1}(x) = \frac{2\nu}{x}\ J_\nu(x)\ .$$

First, let

$$Q_n \equiv J_{n-(1/2)}(y)/J_{n+(1/2)}(y)\ ,$$

$$R_n \equiv J_{n-(1/2)}(x)/J_{n+(1/2)}(x)\ ,$$

and

$$U_n \equiv J_{-n+(1/2)}(x)/J_{-n-(1/2)}(x)\ .$$

Then, for $n = 0$,

$$Q_0 = \cos y/\sin y\ ,$$

$$R_0 = \cos x/\sin x\ ,$$

$$U_0 = R_0^{-1}\ ,$$

and

$$\mathrm{CNSN}_0 = R_0\ ;$$

and for $n = 1, 2, 3, \ldots, N$,

$$Q_n = \left(\frac{2n+1}{y} - Q_{n-1}\right)^{-1}\ ,$$

$$R_n = \left(\frac{2n+1}{y} - Q_{n-1}\right)^{-1} ,$$

$$U_n = \left(\frac{2n+1}{x} - U_{n-1}\right)^{-1} ,$$

and

$$\mathrm{CNSN}_n = -\mathrm{CNSN}_{n-1}\, R_n/U_n , \qquad \mathrm{SPSY}_n = Q_n - n/y ,$$

$$\mathrm{CPCX}_n = -U_n - n/x , \qquad \mathrm{SPSX}_n = R_n - n/x .$$

The termination value for the index $(n = N)$ depends on the size parameter, as illustrated in Fig. 1. The value of N was determined by the magnitudes of the real and imaginary parts of the current a_n and b_n. If the maxima of the quantities $|Re(a_n)|$, $|Im(a_n)|$, $|Re(b_n)|$, and $|Im(b_n)|$ were less than a specified value, say 10^{-9}, the computation of a_n and b_n was terminated. The degree of error resulting in truncating the infinite series defining i_1, i_2, and Q according to the test given above was not significant (i.e., it did not affect the first five significant figures of i_1 or i_2, or the first six decimal places of Q).

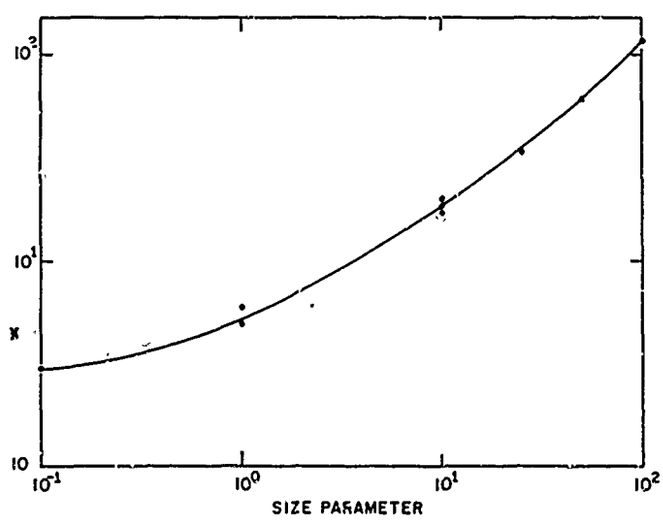

Fig. 1 - The number N of sets of Mie coefficients computed as a function of size parameter x

The generation of Bessel functions of the first kind by upward recurrence is known to be error-unstable for orders much larger than the argument. A study was made comparing upward and downward recurrence methods of generating the necessary Bessel function ratios involved in the computation of a_n and b_n, and it showed that the simpler, upward recurrence technique produced no significant errors in i_1, i_2, or Q for real indexes of refraction and for size parameters in the range $0.2 \leq x \leq 750$. This was because the errors introduced into a_n and b_n by upward recurrence became significant only when the magnitudes of a_n and b_n became very small, and thus contributed very little to the end result.

The scattering efficiency factor Q is obtained from

$$Q = \frac{4}{x^2} \sum_{n=1}^{\infty} \left(n + \frac{1}{2}\right)\left(|a_n|^2 + |b_n|^2\right) .$$

The *exact* value of Q would require an infinite number of terms, but the truncation of the series according to the criterion described above approximated the value of Q well enough that further computation failed to show any change in the first six decimal places.

For speedier computation of i_1 and i_2 a set of coefficients

$$\begin{Bmatrix} A_n \\ B_n \end{Bmatrix} = \frac{2n+1}{n(n+1)} \begin{Bmatrix} a_n \\ b_n \end{Bmatrix}$$

was used. Then

$$i_1(\theta) = \left| \sum_{n=1}^{\infty} [A_n \pi_n(\cos\theta) + B_n \tau_n(\cos\theta)] \right|^2 , \tag{6a}$$

$$i_2(\theta) = \left| \sum_{n=1}^{\infty} [B_n \pi_n(\cos\theta) + A_n \tau_n(\cos\theta)] \right|^2 , \tag{6b}$$

where π_n and τ_n are related to the first and second derivatives (P_n' and P_n'') of the Legendre polynomial

$$\pi_n(\cos\theta) = P_n'(\cos\theta) ,$$

$$\tau_n(\cos\theta) = (\cos\theta)\, P_n'(\cos\theta) - (1 - \cos^2\theta)\, P_n''(\cos\theta) .$$

Using the differential equations which relate the Legendre polynomial P_n to P_n' and P_n'' (e.g., see Ref. 2, p. 115) we can derive the following recurrence relations for P_n' and P_n'' (and hence π_n and τ_n):

$$P_{n+1}'(\cos\theta) = \frac{1}{n}\left[(2n+1)(\cos\theta)\, P_n'(\cos\theta) - (n+1)\, P_{n-1}'(\cos\theta)\right] , \tag{7a}$$

$$P_{n+1}''(\cos\theta) = (2n+1)\, P_n'(\cos\theta) + P_{n-1}''(\cos\theta) . \tag{7b}$$

COMPUTER PROGRAMS

The complex coefficients A_n and B_n are computed by the subroutine MIECORL (listed on page 62). The specified parameters are the size parameter (x) and the index of refraction (EMU). The following quantities are returned:

A: real part of A_n
AI: imaginary part of A_n
B: real part of B_n
BI: imaginary part of B_n
NMAX: maximum value of n
Q: scattering efficiency factor

} for $n = 1, 2, 3, \ldots,$ NMAX

Two subroutines, SCREC and ABRIM, are called by MIECORL. SCREC returns the Bessel function ratios SPSX, SPSY, CPCX, and CNSN for each value of n (= IN). The specified parameters are the size parameter X and the product Y of the index of refraction times the size parameter. The quantities returned from SCREC and the index of refraction are immediately sent to ABRIM, which returns:

ARL: real part of a_n

AIM: imaginary part of a_n

BRL: real part of b_n

BIM: imaginary part of b_n

In the subroutine MIECORL, the quantity ACCY (here ACCY = 10^{-10}) is the value with which the magnitudes of the real and imaginary parts of A_n and B_n are compared to determine when the computation of A_n and B_n is to be terminated. If the test has not been satisfied (i.e., if the magnitudes of the tested quantities remain larger than ACCY) after NSTOP sets of coefficients have been computed, NSTOP (computed in MIECORL) is taken as the maximum value of n, a message to this effect is printed out, and the program continues on its normal course.

The angular scattering functions i_1 and i_2 are computed in subroutine MIESD, listed on p. 11. The specified parameters are

A: real part of A_n
AI: imaginary part of A_n
B: real part of B_n
BI: imaginary part of B_n

} for $n = 1, 2, 3, \ldots,$ NCOFS

NCOFS: maximum value of n (NCOFS = NMAX)

COSTH: the array of values of $\cos\theta$ (θ is the scattering angle) for which $i_1(\theta)$ and $i_2(\theta)$ are to be computed

NANG: the number of values of $\cos\theta$ in the array COSTH.

The following quantities are returned by MIESD for NANG-specified scattering angles:

EA: i_1

EB: i_2

EC: $\sqrt{i_1 i_2 \cos \delta}$

ES: $\sqrt{i_1 i_2 \sin \delta}$.

The angle δ is the phase difference between i_1 and i_2. The quantities EC and ES are of interest in the scattering of arbitrarily polarized light (see Ref. 2, pp. 34-35).

The programs described above and listed in Appendix A were run on the CDC-3800 digital computer at NRL. Table 1 gives the computing times required for several size parameters, when the specified number of angles was 37. The quantity t_1 is the time (in seconds) required to compute NMAX sets of coefficients A_n and B_n, and t_2 is the computation time required for the scattering functions.

Table 1
Computing Time for Mie Coefficients
and Scattering Functions

x	NMAX	t_1 (sec)	t_2 (sec)
0.02	3	0.004	0.059
1.0	5	0.006	0.096
10.0	17	0.024	0.302
25.0	34	0.041	0.607
100.0	114	0.126	2.129

TABLES AND GRAPHS

The angular scattering (intensity) functions $I_1(\theta)$ and $I_2(\theta)$ presented in the tables of Appendix B and graphs of Appendix C are related to the Mie intensity functions (i_1 and i_2) by a constant factor (for all sizes), i.e.,

$$\begin{Bmatrix} I_1(\theta) \\ I_2(\theta) \end{Bmatrix} = f \begin{Bmatrix} i_1(\theta) \\ i_2(\theta) \end{Bmatrix}.$$

The factor $f = 3.55573 \times 10^{-8}$ was applied for convenience in the study (1) for which the computations were made (the computer programs listed here, however, do *not* apply this factor, so that the intensities computed by MIESD are the Mie intensity functions).

The tables and graphs are given for 50 size parameters: 1(1)20, 22(2)50, and 55(5)125 (where 22(2)50, for example, is abbreviated notation for 22, 24, 26, ..., 50).

The graphs were plotted from data computed for scattering angles 0°(0.2°)180° and the tables include the angles 0°(2°)180°. For large size parameters the 2° angular interval does not allow definition of the angular variation of intensity. To tabulate the

intensities at smaller angular intervals would result in very lengthy tables, and thus the graphs were included to furnish the detail lacking in the tables.

The graphs show three curves, with the ordinate on a (base 10) logarithmic scale:

$$I_1(\theta) \times 10^{-N} \text{ (lowest curve)},$$

$$I_2(\theta) \times 10^{-1} \text{ (middle curve)},$$

$$I_1(\theta) + I_2(\theta) \text{ (uppermost curve)}.$$

Each set of three graphs is for a given size parameter x, specified at the top of the graph. The factors were applied to separate the curves, and the factor 10^{-N} (not the same for each graph) may easily be determined by counting the number of decades between the two lower curves at either 0° or 180°. For example, in the first graph (for $x = 1$) the lowest curve is three decades below the middle curve at 180°, and including the one decade by which the middle curve was shifted, we see that $N = 4$, or that the lowest curve is of $I_1(\theta) \times 10^{-4}$.

The scattering efficiency factor Q is given at the top center of each table, just below the size parameter.

The accuracy of the data was checked by running the programs for values of refractive index, size parameter, and scattering angles for which published data existed. On the basis of those comparisons, it is believed that the angular functions are accurate to at least four significant figures and the scattering efficiency factors accurate to six decimal places.

ACKNOWLEDGMENT

The computational procedure and basic programs (ABRIM, PECUR, SCREC) presented in this report were developed by Dr. S. Twomey (a former member of the NRL scientific staff), to whom the author is deeply indebted.

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Appendix A

LISTINGS OF FORTRAN PROGRAMS

```
      SUBROUTINE MIECORL (X,EMU,A,AI,B,BI,NMAX,Q)
      DIMENSION A(1000),AI(1000),B(1000),BI(1000)
      ACCY = 1.0E-10
      NSTOP = MAX1(20.,3.0*X)
      Y = X*EMU
      SIG = 1.
      SUM = 0.
      OV = 0.5
      VK = 0.
      DO 2 N=1,NSTOP
      LOOP = N
      OV = OV + 1.
      SUM = SUM+FLOAT(LOOP)
      G = SIG*OV/SUM
      IN = LOOP
      CALL SCREC(X,Y,SPSX,SPSY,CPCX,CNSN,IN)
      CALL ABRIM(SPSX,SPSY,CPCX,CNSN,ARL,AIM,BRL,BIM,EMU)
      A(LOOP) = G*ARL
      AI(LOOP) = G*AIM
      B(LOOP) = G*BRL
      BI(LOOP) = G*BIM
      VK = VK+(ARL+BRL)*OV
      TEST = AMAX1(ABS(A(LOOP)),ABS(AI(LOOP)),ABS(B(LOOP)),ABS(BI(LOOP))
     1)
      IF(TEST.LE.ACCY) 3,2
2     CONTINUE
      PRINT 300,ACCY,NSTOP,A(NSTOP),AI(NSTOP),B(NSTOP),BI(NSTOP)
300   FORMAT(* SPECIFIED LEVEL OF *,E8.1,* NOT REACHED AFTER *,I3,
     1   * ITERATIONS.*/* LAST A, AI, B, BI = *,4E10.1)
3     VK = VK*4./X**2
      Q = VK
      NMAX = LOOP
      RETURN
      END
```

```
      SUBROUTINE ABRIM (SPSX,SPSY, CPCX,CNSN, ARL,AIM,BRL,BIM,EMU)
      AD = SPSY - EMU *SPSX
      BD = EMU*SPSY -SPSX
      AI = CNSN * (SPSY - EMU*CPCX)
      BI = CNSN * (EMU*SPSY - CPCX)
      DOVA = AI/AD
      BOVA = BI/BD
      ARL = 1./ (1.+DOVA**2)
      BRL = 1./ (1.+BOVA**2)
      AIM =-ARL * DOVA
      BIM =-BRL * BOVA
      RETURN
      END
```

```
      SUBROUTINE SCREC (X,Y,SPSX,SPSY,CPCX,CNSN, IN )
C
C      CALL FIRST WITH ARGUMENTS X AND Y GIVEN AND IN=1 OTHERS IMMATERIAL
C      SUBROUTINE TO RECUR  THE DERIVATIVE RATIOS IN THE MIE COEFFICIENTS.
      IN = MIND(IN,2)
      GO TO (1,2),IN
 1    RX = 1./X
      RY = 1./Y
      SX = SIN(X)      $      CX = COS(X)
      SY = SIN(Y)      $      CY = COS(Y)
      R = CX/SX
      U = SX/CX
      Q = CY/SY
      CNSN = R
      TNIX = -RX
      TNIY =-RY
      ONOX = 0.
      ONOY = 0.
      STO = CNSN
 2    ONOX = ONOX+RX
      CNSN = STO
      ONOY = ONOY + RY
      TNIX = TNIX+RX+RX
      TNIY = TNIY + RY + RY
      R = 1./(TNIX-R)
      U = -1./(TNIX+U)
      Q = 1. / (TNIY-Q)
      CPCX = -U-ONOX
      SPSX = R-ONOX
      SPSY = Q - ONOY
      CNSN = -CNSN*R/U
      STO = CNSN
      RETURN
      END SCREC
```

```
      SUBROUTINE MIESD (A,AI,B,BI,NCOFS,COSTH,NANG,EA,EB,EC,ES)
      DIMENSION A(1000),AI(1000),B(1000),BI(1000)
      DIMENSION COSTH(1801),EA(1801),EB(1801),EC(1801),ES(1801)
      DO 40 KTH= 1,NANG
      RONE = 0.
      RTWO = 0.
      QONE = 0.
      QTWO = 0.
      ARG = COSTH(KTH)
      REX = 1.-ARG**2
      DO 20  ITER = 1,NCOFS
      IN = MIND(ITER,2)
      CALL RECUR(ARG,PP,PD,IN)
      OXPP = ARG*PP        - REX*PD
      RONE = RONE + A(ITER) *PP        + B(ITER) *OXPP
      QONE = QONE + AI(ITER) *PP        + BI(ITER)*OXPP
      RTWO = RTWO + A(ITER) *OXPP + B(ITER) * PP
20    QTWO = QTWO + AI(ITER)*OXPP + BI(ITER) *PP
      EA(KTH) = RONE**2 + QONE**2
      EB(KTH) = RTWO**2 + QTWO**2
      EC(KTH) = (RONE*RTWO + QONE*QTWO)
      ES(KTH) = (QONE*RTWO - QTWO*RONE)
40    CONTINUE
      RETURN
      END MIESD
```

```
      SUBROUTINE PECUR (ARG,PP,PD,IN)
CPECUR RECURS LEGENDRE 1ST AND 2ND DERIVTVS. RETURNS THE NTH AND HOLDS N+1TH
C     BEGIN RECURRENCE BY GIVING THE ARGUMENT -ARG - AND HAVING IN= 1
      GO TO (1,2),IN
 1    PPM2 = 0.
      PPM1 = 1.
      PDM2 = 0.
      PDM1 = 0.
      FACA = 1.
      FACB = 1.
      FACC = ARG
     TWARG = ARG + ARG                                                  (2N-1)X
 2    FACA = FACA + 1.
      FACB = FACB + 2.
      FACC = FACC + TWARG
      PPM0 = (PPM1 * FACC - FACA*PPM2) / (FACA-1.)
      PDM0 = FACB *PPM1 + PDM2
      PP = PPM1
      PD = PDM1
      PPM2 = PPM1
      PDM2 = PDM1
      PPM1 = PPM0
      PDM1 = PDM0
      RETURN
      END
```

Appendix B

TABLES OF SCATTERING FUNCTIONS

X = 1

Q = 0.093924

θ	I_1	I_2	θ	I_1	I_2
0	1.8708-009	1.8708-009	92	1.1884-009	1.4136-014
2	1.8703-009	1.8682-009	94	1.1696-009	1.3094-012
4	1.8689-009	1.8604-009	96	1.1512-009	5.3553-012
6	1.8665-009	1.8474-009	98	1.1330-009	1.2012-011
8	1.8631-009	1.8293-009	100	1.1152-009	2.1132-011
10	1.8588-009	1.8063-009	102	1.0977-009	3.2561-011
12	1.8536-009	1.7785-009	104	1.0806-009	4.6140-011
14	1.8474-009	1.7460-009	106	1.0639-009	6.1707-011
16	1.8404-009	1.7092-009	108	1.0475-009	7.9095-011
18	1.8324-009	1.6682-009	110	1.0315-009	9.8136-011
20	1.8236-009	1.6232-009	112	1.0159-009	1.1866-010
22	1.8140-009	1.5746-009	114	1.0007-009	1.4051-010
24	1.8035-009	1.5227-009	116	9.8597-010	1.6351-010
26	1.7922-009	1.4679-009	118	9.7163-010	1.8750-010
28	1.7801-009	1.4103-009	120	9.5773-010	2.1231-010
30	1.7673-009	1.3504-009	122	9.4426-010	2.3779-010
32	1.7538-009	1.2886-009	124	9.3123-010	2.6379-010
34	1.7396-009	1.2252-009	126	9.1865-010	2.9015-010
36	1.7248-009	1.1606-009	128	9.0653-010	3.1674-010
38	1.7093-009	1.0951-009	130	8.9485-010	3.4341-010
40	1.6933-009	1.0292-009	132	8.8363-010	3.7002-010
42	1.6767-009	9.6310-010	134	8.7287-010	3.9646-010
44	1.6596-009	8.9725-010	136	8.6256-010	4.2260-010
46	1.6421-009	8.3197-010	138	8.5272-010	4.4833-010
48	1.6240-009	7.6758-010	140	8.4334-010	4.7[illegible]-010
50	1.6056-009	7.0442-010	142	8.3442-010	4.9811-010
52	1.5869-009	6.4277-010	144	8.2597-010	5.2197-010
54	1.5678-009	5.8291-010	146	8.1797-010	5.4501-010
56	1.5484-009	5.2511-010	148	8.1044-010	5.6716-010
58	1.5287-009	4.6961-010	150	8.0337-010	5.8833-010
60	1.5088-009	4.1662-010	152	7.9676-010	6.0845-010
62	1.4888-009	3.6635-010	154	7.9062-010	6.2746-010
64	1.4686-009	3.1895-010	156	7.8493-010	6.4530-010
66	1.4483-009	2.7459-010	158	7.7970-010	6.6190-010
68	1.4279-009	2.3339-010	160	7.7493-010	6.7722-010
70	1.4075-009	1.9544-010	162	7.7062-010	6.9122-010
72	1.3871-009	1.6083-010	164	7.6676-010	7.0385-010
74	1.3666-009	1.2961-010	166	7.6336-010	7.1507-010
76	1.3463-009	1.0181-010	168	7.6041-010	7.2486-010
78	1.3260-009	7.7449-011	170	7.5792-010	7.3319-010
80	1.3058-009	5.6514-011	172	7.5588-010	7.4003-010
82	1.2857-009	3.8976-011	174	7.5430-010	7.4537-010
84	1.2659-009	2.4788-011	176	7.5317-010	7.4920-010
86	1.2461-009	1.3885-011	178	7.5249-010	7.5149-010
88	1.2267-009	6.1878-012	180	7.5226-010	7.5226-010
90	1.2074-009	1.6002-012			

X = 2

Q = 0.712948

θ	I_1	I_2	θ	I_1	I_2
0	1.4002-007	1.4002-007	92	1.1024-008	2.3353-009
2	1.3987-007	1.3975-007	94	9.7144-009	1.9966-009
4	1.3940-007	1.3895-007	96	8.5182-009	1.7091-009
6	1.3862-007	1.3761-007	98	7.4305-009	1.4656-009
8	1.3753-007	1.3576-007	100	6.4459-009	1.2595-009
10	1.3615-007	1.3342-007	102	5.5589-009	1.0853-009
12	1.3448-007	1.3062-007	104	4.7640-009	9.3802-010
14	1.3253-007	1.2737-007	106	4.0557-009	8.1370-010
16	1.3031-007	1.2373-007	108	3.4285-009	7.0895-010
18	1.2784-007	1.1972-007	110	2.8769-009	6.2102-010
20	1.2514-007	1.1538-007	112	2.3956-009	5.4769-010
22	1.2222-007	1.1077-007	114	1.9795-009	4.8721-010
24	1.1909-007	1.0593-007	116	1.6234-009	4.3823-010
26	1.1578-007	1.0090-007	118	1.3224-009	3.9971-010
28	1.1231-007	9.5725-008	120	1.0718-009	3.7089-010
30	1.0869-007	9.0456-008	122	8.6714-010	3.5121-010
32	1.0495-007	8.5136-008	124	7.0400-010	3.4023-010
34	1.0110-007	7.9807-008	126	5.7830-010	3.3764-010
36	9.7171-008	7.4512-008	128	4.8611-010	3.4318-010
38	9.3176-008	6.9286-008	130	4.2373-010	3.5657-010
40	8.9136-008	6.4165-008	132	3.8766-010	3.7757-010
42	8.5071-008	5.9181-008	134	3.7463-010	4.0586-010
44	8.0999-008	5.4360-008	136	3.8155-010	4.4111-010
46	7.6938-008	4.9728-008	138	4.0556-010	4.8288-010
48	7.2905-008	4.5303-008	140	4.4396-010	5.3068-010
50	6.8916-008	4.1102-008	142	4.9427-010	5.8394-010
52	6.4984-008	3.7136-008	144	5.5419-010	6.4200-010
54	6.1125-008	3.3415-008	146	6.2158-010	7.0415-010
56	5.7350-008	2.9944-008	148	6.9448-010	7.6959-010
58	5.3672-008	2.6724-008	150	7.7109-010	8.3748-010
60	5.0098-008	2.3753-008	152	8.4976-010	9.0691-010
62	4.6640-008	2.1028-008	154	9.2898-010	9.7697-010
64	4.3303-008	1.8542-008	156	1.0074-009	1.0467-009
66	4.0095-008	1.6287-008	158	1.0838-009	1.1152-009
68	3.7020-008	1.4253-008	160	1.1570-009	1.1814-009
70	3.4083-008	1.2428-008	162	1.2260-009	1.2446-009
72	3.1287-008	1.0799-008	164	1.2901-009	1.3037-009
74	2.8632-008	9.3526-009	166	1.3484-009	1.3580-009
76	2.6121-008	8.0758-009	168	1.4002-009	1.4067-009
78	2.3753-008	6.9542-009	170	1.4449-009	1.4492-009
80	2.1528-008	5.9739-009	172	1.4822-009	1.4847-009
82	1.9443-008	5.1213-009	174	1.5116-009	1.5129-009
84	1.7496-008	4.3832-009	176	1.5328-009	1.5334-009
86	1.5684-008	3.7470-009	178	1.5456-009	1.5457-009
88	1.4005-008	3.2008-009	180	1.5499-009	1.5499-009
90	1.2453-008	2.7336-009			

X = 3

Q = 1.753397

θ	I_1	I_2	θ	I_1	I_2
0	1.4826-006	1.4826-006	92	1.9340-008	1.0288-008
2	1.4786-006	1.4778-006	94	2.1646-008	9.4899-009
4	1.4667-005	1.4634-006	96	2.3697-008	8.7355-009
6	1.4470-006	1.4396-006	98	2.5439-008	8.0220-009
8	1.4199-006	1.4070-006	100	2.6832-008	7.3490-009
10	1.3856-006	1.3661-006	102	2.7856-008	6.7178-009
12	1.3448-006	1.3177-006	104	2.8503-008	6.1299-009
14	1.2978-006	1.2626-006	106	2.8777-008	5.5870-009
16	1.2455-006	1.2017-006	108	2.8694-008	5.0905-009
18	1.1884-006	1.1362-006	110	2.8279-008	4.6407-009
20	1.1274-006	1.0670-006	112	2.7561-008	4.2377-009
22	1.0631-006	9.9530-007	114	2.6578-008	3.8805-009
24	9.9648-007	9.2209-007	116	2.5369-008	3.5681-009
26	9.2819-007	8.4841-007	118	2.3977-008	3.2987-009
28	8.5906-007	7.7525-007	120	2.2443-008	3.0707-009
30	7.8984-007	7.0349-007	122	2.0811-008	2.8821-009
32	7.2123-007	6.3392-007	124	1.9121-008	2.7313-009
34	6.5391-007	5.6723-007	126	1.7414-008	2.6170-009
36	5.8849-007	5.0400-007	128	1.5724-008	2.5379-009
38	5.2550-007	4.4467-007	130	1.4086-008	2.4933-009
40	4.6541-007	3.8959-007	132	1.2526-008	2.4825-009
42	4.0863-007	3.3896-007	134	1.1071-008	2.5051-009
44	3.5547-007	2.9290-007	136	9.7397-009	2.5608-009
46	3.0617-007	2.5142-007	138	8.5476-009	2.6494-009
48	2.6090-007	2.1445-007	140	7.5059-009	2.7702-009
50	2.1975-007	1.8181-007	142	6.6211-009	2.9226-009
52	1.8275-007	1.5330-007	144	5.8954-009	3.1053-009
54	1.4985-007	1.2865-007	146	5.3271-009	3.3168-009
56	1.2097-007	1.0755-007	148	4.9109-009	3.5549-009
58	9.5957-008	8.9659-008	150	4.6382-009	3.8165-009
60	7.4623-008	7.4677-008	152	4.4975-009	4.0983-009
62	5.6743-008	6.2229-008	154	4.4750-009	4.3961-009
64	4.2066-008	5.1995-008	156	4.5549-009	4.7052-009
66	3.0318-008	4.3655-008	158	4.7200-009	5.0202-009
68	2.1215-008	3.6916-008	160	4.9522-009	5.3356-009
70	1.4461-008	3.1507-008	162	5.2330-009	5.6453-009
72	9.7642-009	2.7185-008	164	5.5440-009	5.9434-009
74	6.8337-009	2.3738-008	166	5.8671-009	6.2236-009
76	5.3897-009	2.0982-008	168	6.1856-009	6.4803-009
78	5.1653-009	1.8762-008	170	6.4837-009	6.7079-009
80	5.9103-009	1.6952-008	172	6.7476-009	6.9015-009
82	7.3937-009	1.5447-008	174	6.9656-009	7.0568-009
84	9.4758-009	1.4167-008	176	7.1283-009	7.1703-009
86	1.1759-008	1.3059-008	178	7.2287-009	7.2394-009
88	1.4290-008	1.2051-008	180	7.2626-009	7.2626-009
90	1.6856-008	1.1137-008			

X = 4

Q = 2.819691

θ	I_1	I_2	θ	I_1	I_2
0	7.0318-006	7.0318-006	92	3.8676-008	3.3953-008
2	6.9969-006	6.9945-006	94	2.7740-008	3.1817-008
4	6.8931-006	6.8839-006	96	1.8660-008	2.9950-008
6	6.7232-006	6.7032-006	98	1.1673-008	2.8311-008
8	6.4913-006	6.4576-006	100	6.8930-009	2.6858-008
10	6.2033-006	6.1542-006	102	4.3153-009	2.5554-008
12	5.8664-006	5.8014-006	104	3.8317-009	2.4367-008
14	5.4886-006	5.4089-006	106	5.2438-009	2.3273-008
16	5.0788-006	4.9868-006	108	8.2813-009	2.2257-008
18	4.6463-006	4.5458-006	110	1.2621-008	2.1308-008
20	4.2005-006	4.0963-006	112	1.7908-008	2.0423-008
22	3.7507-006	3.6480-006	114	2.3771-008	1.9606-008
24	3.3055-006	3.2101-006	116	2.9848-008	1.8858-008
26	2.8731-006	2.7904-006	118	3.5795-008	1.8185-008
28	2.4605-006	2.3955-006	120	4.1304-008	1.7593-008
30	2.0738-006	2.0305-006	122	4.6118-008	1.7086-008
32	1.7177-006	1.6991-006	124	5.0030-008	1.6666-008
34	1.3959-006	1.4035-006	126	5.2898-008	1.6334-008
36	1.1105-006	1.1444-006	128	5.4642-008	1.6090-008
38	8.6263-007	9.2147-007	130	5.5243-008	1.5933-008
40	6.5217-007	7.3325-007	132	5.4743-008	1.5862-008
42	4.7800-007	5.7740-007	134	5.3233-008	1.5875-008
44	3.3808-007	4.5100-007	136	5.0850-008	1.5971-008
46	2.2970-007	3.5068-007	138	4.7768-008	1.6151-008
48	1.4957-007	2.7290-007	140	4.4179-008	1.6415-008
50	9.4058-008	2.1407-007	142	4.0293-008	1.6766-008
52	5.9327-008	1.7075-007	144	3.6318-008	1.7205-008
54	4.1507-008	1.3973-007	146	3.2453-008	1.7735-008
56	3.6835-008	1.1813-007	148	2.8878-008	1.8357-008
58	4.1775-008	1.0347-007	150	2.5745-008	1.9071-008
60	5.3114-008	9.3691-008	152	2.3173-008	1.9872-008
62	6.8031-008	8.7119-008	154	2.1242-008	2.0754-008
64	8.4144-008	8.2484-008	156	1.9991-008	2.1708-008
66	9.9537-008	7.8857-008	158	1.9419-008	2.2719-008
68	1.1275-007	7.5612-008	160	1.9487-008	2.3770-008
70	1.2278-007	7.2365-008	162	2.0120-008	2.4838-008
72	1.2901-007	6.8924-008	164	2.1216-008	2.5899-008
74	1.3122-007	6.5236-008	166	2.2649-008	2.6926-008
76	1.2947-007	6.1339-008	168	2.4281-008	2.7891-008
78	1.2410-007	5.7326-008	170	2.5970-008	2.8765-008
80	1.1563-007	5.3308-008	172	2.7577-008	2.9523-008
82	1.0471-007	4.9400-008	174	2.8974-008	3.0140-008
84	9.2055-008	4.5698-008	176	3.0054-008	3.0595-008
86	7.8427-008	4.2271-008	178	3.0736-008	3.0875-008
88	6.4554-008	3.9165-008	180	3.0970-008	3.0970-008
90	5.1108-008	3.6395-008			

X = 5

Q = 3.591033

θ	I_1	I_2	θ	I_1	I_2
0	2.0833-005	2.0833-005	92	9.7572-008	5.2825-008
2	2.0667-005	2.0665-005	94	1.1379-007	4.8561-008
4	2.0177-005	2.0167-005	96	1.2511-007	4.5011-008
6	1.9362-005	1.9362-005	98	1.3060-007	4.2158-008
8	1.8314-005	1.8284-005	100	1.2995-007	3.9964-008
10	1.7016-005	1.6979-005	102	1.2346-007	3.8368-008
12	1.5536-005	1.5500-005	104	1.1191-007	3.7287-008
14	1.3930-005	1.3905-005	106	9.6511-008	3.6621-008
16	1.2253-005	1.2252-005	108	7.8737-008	3.6261-008
18	1.0563-005	1.0599-005	110	6.0208-008	3.6107-008
20	8.9107-006	8.9957-006	112	4.2535-008	3.6070-008
22	7.3424-006	7.4863-006	114	2.7186-008	3.6091-008
24	5.8962-006	6.1051-006	116	1.5367-008	3.6134-008
26	4.6012-006	4.8764-006	118	7.9409-009	3.6197-008
28	3.4768-006	3.8141-006	120	5.3646-009	3.6301-008
30	2.5325-006	2.9224-006	122	7.6741-009	3.6487-008
32	1.7687-006	2.1969-006	124	1.4498-008	3.6807-008
34	1.1776-006	1.6263-006	126	2.5107-008	3.7313-008
36	7.4495-007	1.1939-00[illegible]	128	3.8488-008	3.8051-008
38	4.5118-007	8.7999-007	130	5.3446-008	3.9049-008
40	2.7366-007	6.6312-007	132	6.8704-008	4.0317-008
42	1.8820-007	5.2207-007	134	8.3022-008	4.1845-008
44	1.7071-007	4.3702-007	136	9.5296-008	4.3603-008
46	1.9857-007	3.9051-007	138	1.0465-007	4.5543-008
48	2.5172-007	3.6803-007	140	1.1048-007	4.7611-008
50	3.1341-007	3.5824-007	142	1.1254-007	4.9745-008
52	3.7064-007	3.5296-007	144	1.1090-007	5.1890-008
54	4.1429-007	3.4683-007	146	1.0595-007	5.3998-008
56	4.3890-007	3.3689-007	148	9.8333-008	5.6034-008
58	4.4236-007	3.2204-007	150	8.8909-008	5.7976-008
60	4.2533-007	3.0253-007	152	7.8632-008	5.9818-008
62	3.9059-007	2.7940-007	154	6.8478-008	6.1566-008
64	3.4238-007	2.5410-007	156	5.9350-008	6.3233-008
66	2.8571-007	2.2811-007	158	5.1995-008	6.4837-008
68	2.2579-007	2.0275-007	160	4.6946-008	6.6393-008
70	1.6750-007	1.7901-007	162	4.4477-008	6.7909-008
72	1.1499-007	1.5754-007	164	4.4587-008	6.9387-008
74	7.1431-008	1.3863-007	166	4.7017-008	7.0814-008
76	3.8858-008	1.2230-007	168	5.1200-008	7.2167-008
78	1.8149-008	1.0836-007	170	5.6724-008	7.3412-008
80	9.0951-009	9.6506-008	172	6.2602-008	7.4511-008
82	1.0548-008	8.6396-008	174	6.8154-008	7.5421-008
84	2.0629-008	7.7705-008	176	7.2687-008	7.6105-008
86	3.6966-008	7.0165-008	178	7.5645-008	7.6528-008
88	5.6946-008	6.3578-008	180	7.6672-008	7.6672-008
90	7.7950-008	5.7821-008			

X = 6

Q = 3.889158

θ	I_1	I_2	θ	I_1	I_2
0	4.4574-005	4.4574-005	92	7.7006-008	1.2783-007
2	4.4048-005	4.4048-005	94	3.9364-008	1.2324-007
4	4.2503-005	4.2506-005	96	1.4015-008	1.1743-007
6	4.0032-005	4.0043-005	98	3.3506-009	1.1045-007
8	3.6779-005	3.6812-005	100	7.7583-009	1.0255-007
10	3.2929-005	3.3006-005	102	2.5665-008	9.4116-008
12	2.8696-005	2.8839-005	104	5.3818-008	8.5624-008
14	2.4296-005	2.4534-005	106	8.7766-008	7.7545-008
16	1.9943-005	2.0300-005	108	1.2247-007	7.0270-008
18	1.5824-005	1.6317-005	110	1.5299-007	6.4059-008
20	1.2093-005	1.2728-005	112	1.7512-007	5.9014-008
22	8.8599-006	9.6287-006	114	1.8590-007	5.5089-008
24	6.1887-006	7.0687-006	116	1.8405-007	5.2125-008
26	4.0978-006	5.0524-006	118	1.7000-007	4.9909-008
28	2.5646-006	3.5468-006	120	1.4591-007	4.8232-008
30	1.5331-006	2.4908-006	122	1.1527-007	4.6950-008
32	9.2367-007	1.8054-006	124	8.2440-008	4.6020-008
34	6.4336-007	1.4045-006	126	5.2053-008	4.5516-008
36	5.9588-007	1.2037-006	128	2.8378-008	4.5620-008
38	6.9038-007	1.1279-006	130	1.4749-008	4.6586-008
40	8.4829-007	1.1155-006	132	1.3126-008	4.8688-008
42	1.0078-006	1.1213-006	134	2.3847-008	5.2162-008
44	1.1258-006	1.1158-006	136	4.5605-008	5.7153-008
46	1.1781-006	1.0840-006	138	7.5648-008	6.3671-008
48	1.1570-006	1.0221-006	140	1.1017-007	7.1571-008
50	1.0682-006	9.3423-007	142	1.4485-007	8.0558-008
52	9.2703-007	8.2904-007	144	1.7544-007	9.0208-008
54	7.5391-007	7.1652-007	146	1.9832-007	1.0002-007
56	5.7073-007	6.0612-007	148	2.1100-007	1.0947-007
58	3.9758-007	5.0513-007	150	2.1239-007	1.1805-007
60	2.5046-007	4.2813-007	152	2.0294-007	1.2538-007
62	1.3985-007	3.4703-007	154	1.8448-007	1.3116-007
64	7.0363-008	2.9152-007	156	1.5995-007	1.3526-007
66	4.1058-008	2.4979-007	158	1.3292-007	1.3771-007
68	4.6408-008	2.1922-007	160	1.0707-007	1.3865-007
70	7.7661-008	1.9710-007	162	8.5666-008	1.3833-007
72	1.2435-007	1.8099-007	164	7.1095-008	1.3707-007
74	1.7579-007	1.6899-007	166	6.4565-008	1.3518-007
76	2.2237-007	1.5981-007	168	6.5984-008	1.3298-007
78	2.5655-007	1.5266-007	170	7.4036-008	1.3075-007
80	2.7349-007	1.4707-007	172	8.6444-008	1.2871-007
82	2.7132-007	1.4274-007	174	1.0038-007	1.2699-007
84	2.5300-007	1.3940-007	176	1.1292-007	1.2571-007
86	2.1589-007	1.3668-007	178	1.2158-007	1.2493-007
88	1.7112-007	1.3416-007	180	1.2466-007	1.2466-007
90	1.2276-007	1.3136-007			

X = 7

Q = 3.739585

θ	I_1	I_2	θ	I_1	I_2
0	7.4800-005	7.4800-005	92	1.8798-007	1.2332-007
2	7.3534-005	7.3549-005	94	2.3664-007	1.1589-007
4	6.9845-005	6.9907-005	96	2.6645-007	1.1474-007
6	6.4049-005	6.4193-005	98	2.7130-007	1.1862-007
8	5.6629-005	5.6896-005	100	2.5002-007	1.2566-007
10	4.8179-005	4.8509-005	102	2.0654-007	1.3370-007
12	3.9334-005	3.9963-005	104	1.4923-007	1.4076-007
14	3.0704-005	3.1554-005	106	8.9323-008	1.4540-007
16	2.2809-005	2.3881-005	108	3.8773-008	1.4691-007
18	1.6034-005	1.7304-005	110	7.9255-009	1.4535-007
20	1.0607-005	1.2025-005	112	3.4557-009	1.4138-007
22	6.5940-006	8.0841-006	114	2.6973-008	1.3597-007
24	3.9155-006	5.3891-006	116	7.4605-008	1.3006-007
26	2.3804-006	3.7464-006	118	1.3766-007	1.2430-007
28	1.7278-006	2.9062-006	120	2.0426-007	1.1888-007
30	1.6710-006	2.6050-006	122	2.6170-007	1.1353-007
32	1.9368-006	2.6014-006	124	2.9891-007	1.0770-007
34	2.2965-006	2.7016-006	126	3.0879-007	1.0075-007
36	2.5846-006	2.7717-006	128	2.8963-007	9.2318-008
38	2.7045-006	2.7389-006	130	2.4558-007	8.2519-008
40	2.6242-006	2.5827-006	132	1.8588-007	7.2084-008
42	2.3629-006	2.3208-006	134	1.2306-007	6.2334-008
44	1.9739-006	1.9926-006	136	7.0478-008	5.4995-008
46	1.5257-006	1.6440-006	138	3.9641-008	5.1892-008
48	1.0858-006	1.3155-006	140	3.7879-008	5.4576-008
50	7.0900-007	1.0359-006	142	6.6850-008	6.3986-008
52	4.2965-007	8.1914-007	144	1.2218-007	8.0199-008
54	2.6110-007	6.6590-007	146	1.9431-007	1.0233-007
56	1.9586-007	5.6734-007	148	2.7036-007	1.2864-007
58	2.1266-007	5.0951-007	150	3.3669-007	1.5671-007
60	2.8187-007	4.7757-007	152	3.8154-007	1.8388-007
62	3.7206-007	4.5880-007	154	3.9729-007	2.0760-007
64	4.5528-007	4.4423-007	156	3.8183-007	2.2579-007
66	5.1079-007	4.2877-007	158	3.3884-007	2.3714-007
68	5.2689-007	4.1055-007	160	2.7685-007	2.4123-007
70	5.0108-007	3.8961-007	162	2.0735-007	2.3850-007
72	4.3886-007	3.6679-007	164	1.4240-007	2.3011-007
74	3.5157-007	3.4285-007	166	9.2146-008	2.1768-007
76	2.5380-007	3.1807-007	168	6.2905-008	2.0301-007
78	1.6068-007	2.9232-007	170	5.6063-008	1.8787-007
80	8.5452-008	2.6541-007	172	6.8131-008	1.7375-007
82	3.7580-008	2.3746-007	174	9.1838-008	1.6179-007
84	2.1505-008	2.0916-007	176	1.1804-007	1.5280-007
86	3.6252-008	1.8186-007	178	1.3797-007	1.4724-007
88	7.5827-008	1.5732-007	180	1.4537-007	1.4537-007
90	1.3039-007	1.3734-007			

X = 8

Q = 3.315825

θ	I_1	I_2	θ	I_1	I_2
0	1.0458-004	1.0458-004	92	1.4314-007	2.8976-007
2	1.0202-004	1.0213-004	94	7.4978-008	2.7335-007
4	9.4657-005	9.5061-005	96	3.0344-008	2.4554-007
6	8.3382-005	8.4230-005	98	2.1826-008	2.1132-007
8	6.9522-005	7.0888-005	100	5.3833-008	1.7732-007
10	5.4614-005	5.6487-005	102	1.2037-007	1.4981-007
12	4.0166-005	4.2450-005	104	2.0560-007	1.3305-007
14	2.7433-005	2.9965-005	106	2.8733-007	1.2828-007
16	1.7266-005	1.9841-005	108	3.4284-007	1.3374-007
18	1.0036-005	1.2439-005	110	3.5532-007	1.4555-007
20	5.6486-006	7.6960-006	112	3.1930-007	1.5922-007
22	3.6418-006	5.2094-006	114	2.4307-007	1.7108-007
24	3.3296-006	4.3726-006	116	1.4729-007	1.7933-007
26	3.9616-006	4.5184-006	118	5.9870-008	1.8420-007
28	4.8659-006	5.0458-006	120	8.4036-009	1.8792-007
30	5.5485-006	5.5062-006	122	1.2159-008	1.9255-007
32	5.7394-006	5.6410-006	124	7.6059-008	1.9970-007
34	5.3834-006	5.3735-006	126	1.8846-007	2.0912-007
36	4.5902-006	4.7656-006	128	3.2359-007	2.1845-007
38	3.5628-006	3.9583-006	130	4.4817-007	2.2381-007
40	2.5221-006	3.1120-006	132	5.3050-007	2.2097-007
42	1.6486-006	2.3601-006	134	5.4940-007	2.0691-007
44	1.0467-006	1.7832-006	136	5.0064-007	1.8114-007
46	7.3768-007	1.4036-006	138	3.9862-007	1.4640-007
48	6.7357-007	1.1967-006	140	2.7301-007	1.0852-007
50	7.6557-007	1.1106-006	142	1.6094-007	7.5250-008
52	9.1498-007	1.0868-006	144	9.6836-008	5.4556-008
54	1.0391-006	1.0770-006	146	1.0292-007	5.2627-008
56	1.0866-006	1.0507-006	148	1.8276-007	7.2267-008
58	1.0413-006	9.9691-007	150	3.1998-007	1.1204-007
60	9.1609-007	9.1882-007	152	4.8235-007	1.6644-007
62	7.4198-007	8.2704-007	154	6.3027-007	2.2702-007
64	5.5519-007	7.3289-007	156	7.2717-007	2.8423-007
66	3.8731-007	6.4425-007	158	7.4916-007	3.2938-007
68	2.5947-007	5.6438-007	160	6.9095-007	3.5640-007
70	1.8076-007	4.9310-007	162	5.6672-007	3.6284-007
72	1.4996-007	4.2908-007	164	4.0566-007	3.4994-007
74	1.5866-007	3.7193-007	166	2.4356-007	3.2198-007
76	1.9449-007	3.2312-007	168	1.1293-007	2.8492-007
78	2.4360-007	2.8551-007	170	3.4511-008	2.4504-007
80	2.9229-007	2.6192-007	172	1.2586-008	2.0767-007
82	3.2820-007	2.5340-007	174	3.5257-008	1.7655-007
84	3.4157-007	2.5803-007	176	7.9548-008	1.5375-007
86	3.2669-007	2.7085-007	178	1.1960-007	1.4001-007
88	2.8342-007	2.8487-007	180	1.3545-007	1.3545-007
90	2.1810-007	2.9294-007			

X = 9

Q = 2.783077

θ	I_1	I_2	θ	I_1	I_2
0	1.2627-004	1.2627-004	92	1.8225-007	1.9532-007
2	1.2177-004	1.2213-004	94	2.1311-007	2.0198-007
4	1.0903-004	1.1037-004	96	2.4336-007	2.3653-007
6	9.0213-005	9.2901-005	98	2.5481-007	2.8286-007
8	6.8357-005	7.2408-005	100	2.3296-007	3.2166-007
10	4.6736-005	5.1802-005	102	1.7649-007	3.3797-007
12	2.8174-005	3.3634-005	104	1.0164-007	3.2628-007
14	1.4524-005	1.9641-005	106	3.8379-008	2.9167-007
16	6.4223-006	1.0520-005	108	1.9148-008	2.4699-007
18	3.3378-006	5.9715-006	110	6.4410-008	2.0719-007
20	3.8909-006	4.9442-006	112	1.7133-007	1.8346-007
22	6.3199-006	6.0192-006	114	3.1115-007	1.7933-007
24	8.9625-006	7.8002-006	116	4.3745-007	1.9031-007
26	1.0626-005	9.2188-006	118	5.0307-007	2.0700-007
28	1.0766-005	9.6918-006	120	4.7942-007	2.2004-007
30	9.4685-006	9.1212-006	122	3.7028-007	2.2477-007
32	7.2579-006	7.7697-006	124	2.1397-007	2.2352-007
34	4.8356-006	6.0750-006	126	7.1852-008	2.2439-007
36	2.8230-006	4.4671-006	128	6.6270-009	2.3716-007
38	1.5875-006	3.2409-006	130	5.8270-008	2.6794-007
40	1.1845-006	2.5040-006	132	2.2683-007	3.1497-007
42	1.4090-006	2.1984-006	134	4.6929-007	3.6751-007
44	1.9182-006	2.1656-006	136	7.1265-007	4.0863-007
46	2.3715-006	2.2262-006	138	8.7904-007	4.2095-007
48	2.5392-006	2.2421-006	140	9.1418-007	3.9348-007
50	2.3522-006	2.1468-006	142	8.0845-007	3.2680-007
52	1.8876-006	1.9430-006	144	6.0233-007	2.3438-007
54	1.3080-006	1.6769-006	146	3.7379-007	1.3953-007
56	7.8608-007	1.4064-006	148	2.1138-007	6.8543-008
58	4.4178-007	1.1748-006	150	1.8279-007	4.2435-008
60	3.1161-007	9.9934-007	152	3.1003-007	7.0168-008
62	3.5434-007	8.7399-007	154	5.6061-007	1.4562-007
64	4.8292-007	7.8103-007	156	8.5799-007	2.4944-007
66	6.0577-007	7.0386-007	158	1.1077-006	3.5512-007
68	6.6024-007	6.3506-007	160	1.2295-006	4.3710-007
70	6.2766-007	5.7708-007	162	1.1846-006	4.7823-007
72	5.2840-007	5.3693-007	164	9.8741-007	4.7403-007
74	4.0324-007	5.1883-007	166	6.9809-007	4.3253-007
76	2.9167-007	5.1898-007	168	3.9992-007	3.7016-007
78	2.1642-007	5.2517-007	170	1.6902-007	3.0536-007
80	1.7927-007	5.2119-007	172	4.8737-008	2.5249-007
82	1.6735-007	4.9385-007	174	3.7755-008	2.1815-007
84	1.6453-007	4.3910-007	176	9.5882-008	2.0107-007
86	1.6129-007	3.6450-007	178	1.6465-007	1.9517-007
88	1.5841-007	2.8680-007	180	1.9408-007	1.9408-007
90	1.6331-007	2.2560-007			

X = 10

Q = 2.206549

θ	I_1	I_2
0	1.2708-004	1.2708-004
2	1.2080-004	1.2121-004
4	1.0339-004	1.0490-004
6	7.8690-005	8.1643-005
8	5.1892-005	5.6144-005
10	2.8098-005	3.3060-005
12	1.1023-005	1.5816-005
14	2.1859-006	5.9031-006
16	8.2522-007	2.8111-006
18	4.4719-006	4.5310-006
20	9.9478-006	8.4129-006
22	1.4418-005	1.2050-005
24	1.6162-005	1.3908-005
26	1.4855-005	1.3550-005
28	1.1352-005	1.1462-005
30	7.1241-006	8.6217-006
32	3.5986-006	6.0121-006
34	1.6541-006	4.2675-006
36	1.4123-006	3.5356-006
38	2.3501-006	3.5587-006
40	3.6304-006	3.8857-006
42	4.4855-006	4.1011-006
44	4.4995-006	3.9777-006
46	3.6987-006	3.5135-006
48	2.4505-006	2.8634-006
50	1.2460-006	2.2314-006
52	4.7367-007	1.7639-006
54	2.7850-007	1.5035-006
56	5.4704-007	1.3993-006
58	1.0035-006	1.3577-006
60	1.3561-006	1.2989-006
62	1.4235-006	1.1916-006
64	1.1905-006	1.0535-006
66	7.8178-007	9.2650-007
68	3.7971-007	8.4345-007
70	1.3126-007	8.0725-007
72	8.8400-008	7.9104-007
74	2.0246-007	7.5668-007
76	3.6570-007	6.7911-007
78	4.7272-007	5.6220-007
80	4.6945-007	4.3758-007
82	3.6843-007	3.4777-007
84	2.2885-007	3.2304-007
86	1.1713-007	3.6450-007
88	7.1318-008	4.4222-007
90	8.6841-008	5.0926-007
92	1.2795-007	5.2428-007
94	1.5454-007	4.7143-007
96	1.4726-007	3.6768-007
98	1.1645-007	2.5425-007
100	9.1304-008	1.7667-007
102	9.7347-008	1.6336-007
104	1.3708-007	2.1310-007
106	1.8614-007	2.9707-007
108	2.0795-007	3.7384-007
110	1.7841-007	4.0960-007
112	1.0571-007	3.9338-007
114	3.2050-008	3.4029-007
116	1.4146-008	2.8152-007
118	9.1455-008	2.4701-007
120	2.5919-007	2.4987-007
122	4.6213-007	2.8058-007
124	6.1579-007	3.1396-007
126	6.4645-007	3.2478-007
128	5.3122-007	3.0380-007
130	3.1700-007	2.6510-007
132	1.0611-007	2.4044-007
134	1.2750-008	2.6267-007
136	1.0913-007	3.4642-007
138	3.8697-007	4.7609-007
140	7.5445-007	6.0809-007
142	1.0724-006	6.8768-007
144	1.2152-006	6.7319-007
146	1.1287-006	5.5680-007
148	8.5778-007	3.7146-007
150	5.3042-007	1.8002-007
152	3.0259-007	5.0660-008
154	2.8968-007	2.8892-008
156	5.1480-007	1.1882-007
158	8.9783-007	2.8185-007
160	1.2902-006	4.5364-007
162	1.5395-006	5.7154-007
164	1.5545-006	6.0042-007
166	1.3404-006	5.4531-007
168	9.9113-007	4.4587-007
170	6.4140-007	3.5571-007
172	4.0506-007	3.1673-007
174	3.2732-007	3.4069-007
176	3.7375-007	4.0615-007
178	4.5895-007	4.7177-007
180	4.9835-007	4.9835-007

X = 11

Q = 1.774110

θ	I_1	I_2	θ	I_1	I_2
0	1.1287-004	1.1287-004	92	2.4004-007	1.9622-007
2	1.0585-004	1.0576-004	94	9.4853-008	2.1536-007
4	8.6771-005	8.6430-005	96	1.9377-008	3.3500-007
6	6.0854-005	6.0251-005	98	3.2326-008	4.7862-007
8	3.4788-005	3.4006-005	100	9.2325-008	5.5690-007
10	1.4489-005	1.3624-005	102	1.3633-007	5.1998-007
12	3.3121-006	2.3727-006	104	1.2784-007	3.8590-007
14	1.3051-006	1.8886-007	106	8.0651-008	2.2870-007
16	5.7028-006	4.2759-006	108	4.3208-008	1.3406-007
18	1.2345-005	1.0590-005	110	5.6992-008	1.4947-007
20	1.7386-005	1.5520-005	112	1.2077-007	2.5843-007
22	1.8612-005	1.7081-005	114	1.8803-007	3.9337-007
24	1.5917-005	1.5243-005	116	2.0124-007	4.7824-007
26	1.0882-005	1.1424-005	118	1.3960-007	4.7423-007
28	5.7761-006	7.5189-006	120	4.5136-008	4.0062-007
30	2.4586-006	4.3680-006	122	4.7229-009	3.1875-007
32	1.6706-006	4.2423-006	124	9.4798-008	2.8990-007
34	2.9282-006	4.8798-006	126	3.2281-007	3.3432-007
36	4.9659-006	5.9279-006	128	6.0585-007	4.1776-007
38	6.4415-006	6.5032-006	130	8.0676-007	4.7467-007
40	6.5490-006	6.1868-006	132	8.1186-007	4.5398-007
42	5.2839-006	5.1080-006	134	6.0588-007	3.5823-007
44	3.2989-006	3.7496-006	136	2.9596-007	2.4967-007
46	1.4831-006	2.6296-006	138	6.4043-008	2.1673-007
48	5.0422-007	2.0396-006	140	6.9140-008	3.1889-007
50	5.3057-007	1.9558-006	142	3.5341-007	5.4281-007
52	1.2357-006	2.1272-006	144	8.0820-007	7.9823-007
54	2.0388-006	2.2574-006	146	1.2244-006	9.5992-007
56	2.4280-006	2.1676-006	148	1.4031-006	9.3461-007
58	2.1985-006	1.8599-006	150	1.2667-006	7.1582-007
60	1.5013-006	1.4704-006	152	9.0672-007	3.9417-007
62	7.0635-007	1.1593-006	154	5.3941-007	1.1504-007
64	1.7841-007	1.0111-006	156	3.9118-007	4.8036-009
66	8.9811-008	9.9977-007	158	5.7681-007	1.0565-007
68	3.6189-007	1.0256-006	160	1.0376-006	3.5498-007
70	7.4575-007	9.9025-007	162	1.5735-006	6.2096-007
72	9.8019-007	8.5998-007	164	1.9496-006	7.7479-007
74	9.3209-007	6.7932-007	166	2.0177-006	7.5921-007
76	6.4691-007	5.3342-007	168	1.7851-006	6.1563-007
78	2.9482-007	4.8725-007	170	1.3955-006	4.5532-007
80	5.6817-008	5.4182-007	172	1.0390-006	3.9224-007
82	2.2245-008	6.3381-007	174	8.4570-007	4.7640-007
84	1.5326-007	6.7680-007	176	8.2695-007	6.6603-007
86	3.2683-007	6.1655-007	178	8.9296-007	8.5384-007
88	4.1923-007	4.6564-007	180	9.3146-007	9.3146-007
90	3.7787-007	2.9627-007			

X = 12

Q = 1.660397

θ	I_1	I_2	θ	I_1	I_2
0	1.2713-004	1.2713-004	92	1.3900-007	5.9511-007
2	1.1899-004	1.1855-004	94	3.6899-007	5.8544-007
4	9.7163-005	9.5650-005	96	4.9869-007	4.2789-007
6	6.8428-005	6.5727-005	98	4.3695-007	2.2094-007
8	4.0947-005	3.7510-005	100	2.4342-007	1.0449-007
10	2.1141-005	1.7713-005	102	6.2309-008	1.5884-007
12	1.1558-005	8.7934-006	104	2.8892-009	3.4559-007
14	1.0596-005	8.7764-006	106	6.2682-008	5.3350-007
16	1.3974-005	1.2986-005	108	1.4766-007	5.9086-007
18	1.7088-005	1.6626-005	110	1.6384-007	4.7822-007
20	1.7057-005	1.6890-005	112	9.9570-008	2.7510-007
22	1.3583-005	1.3707-005	114	3.0185-008	1.2219-007
24	8.4488-006	9.0247-006	116	4.3658-008	1.2121-007
26	4.1282-006	5.2734-006	118	1.5329-007	2.6493-007
28	2.3415-006	3.9397-006	120	2.7564-007	4.4725-007
30	3.2722-006	4.9514-006	122	2.9859-007	5.4460-007
32	5.7096-006	7.0177-006	124	1.8726-007	5.0756-007
34	7.8847-006	8.5533-006	126	3.7485-008	3.9470-007
36	8.4605-006	8.5773-006	128	2.1595-008	3.2330-007
38	7.1484-006	7.1141-006	130	2.5570-007	3.7416-007
40	4.6940-006	4.9789-006	132	6.8699-007	5.2327-007
42	2.3333-006	3.1827-006	134	1.0967-006	6.5453-007
44	1.0752-006	2.3518-006	136	1.2347-006	6.4812-007
46	1.2049-006	2.4726-006	138	9.9937-007	4.8049-007
48	2.2382-006	3.0363-006	140	5.3412-007	2.5926-007
50	3.2922-006	3.4255-006	142	1.5630-007	1.5979-007
52	3.6214-006	3.2820-006	144	1.5431-007	3.0171-007
54	3.0108-006	2.6531-006	146	5.8590-007	6.5140-007
56	1.8243-006	1.8754-006	148	1.2217-006	1.0240-006
58	7.2152-007	1.3149-006	150	1.6845-006	1.1927-006
60	2.3854-007	1.1400-006	152	1.6989-006	1.0367-006
62	4.8788-007	1.2580-006	154	1.2848-006	6.2942-007
64	1.1412-006	1.4236-006	156	7.5778-007	2.0175-007
66	1.6767-006	1.4239-006	158	5.3074-007	1.7759-009
68	1.7175-006	1.2097-006	160	8.4383-007	1.3963-007
70	1.2450-006	8.9902-007	162	1.6039-006	5.2084-007
72	5.6987-007	6.6701-007	164	2.4399-006	9.1225-007
74	9.9135-008	6.1338-007	166	2.9354-006	1.0963-006
76	6.7326-008	6.9918-007	168	2.8822-006	1.0098-006
78	4.0521-007	7.8973-007	170	2.3868-006	7.7577-007
80	8.1766-007	7.6310-007	172	1.7702-006	6.0807-007
82	9.9983-007	6.0091-007	174	1.3428-006	6.5871-007
84	8.3662-007	3.9709-007	176	1.2154-006	9.1239-007
86	4.5531-007	2.8226-007	178	1.2753-006	1.2011-006
88	1.1135-007	3.2282-007	180	1.3264-006	1.3264-006
90	1.5411-009	4.6993-007			

X = 13

Q = 1.941343

θ	I_1	I_2	θ	I_1	I_2
0	2.5023-004	2.5023-004	92	1.0383-006	2.9286-007
2	2.3448-004	2.3569-004	94	4.5206-007	1.8176-007
4	1.9261-004	1.9677-004	96	4.7879-008	2.7878-007
6	1.3821-004	1.4537-004	98	9.3080-008	4.9156-007
8	8.6699-005	9.5324-005	100	4.6111-007	6.2210-007
10	4.8860-005	5.6838-005	102	7.7597-007	5.3849-007
12	2.7494-005	3.3336-005	104	7.5292-007	2.9358-007
14	1.8552-005	2.2009-005	106	4.2922-007	8.5917-008
16	1.5264-005	1.7069-005	108	9.4475-008	9.2851-008
18	1.2425-005	1.3509-005	110	6.4148-009	3.1759-007
20	8.4625-006	9.2885-006	112	1.6347-007	5.8193-007
22	4.7139-006	5.1720-006	114	3.3781-007	6.7330-007
24	3.1478-006	2.9508-006	116	3.2180-007	5.2248-007
26	4.3909-006	3.5432-006	118	1.4120-007	2.6058-007
28	7.2591-006	6.1881-006	120	2.5700-008	1.0666-007
30	9.7129-006	8.9951-006	122	1.6407-007	1.8229-007
32	1.0251-005	1.0209-005	124	4.8655-007	4.1272-007
34	8.7182-006	9.2334-006	126	7.0217-007	5.9981-007
36	6.1332-006	6.8028-006	128	5.7975-007	6.0222-007
38	3.8699-006	4.3331-006	130	2.1494-007	4.6335-007
40	2.8274-006	2.9836-006	132	9.5321-009	3.7111-007
42	3.0612-006	3.0386-006	134	3.3738-007	4.8070-007
44	3.9464-006	3.9131-006	136	1.1715-006	7.5667-007
46	4.6464-006	4.6683-006	138	2.0209-006	9.8147-007
48	4.5823-006	4.6401-006	140	2.2827-006	9.3673-007
50	3.6918-006	3.7892-006	142	1.7482-006	6.0851-007
52	2.4009-006	2.6103-006	144	8.3106-007	2.3388-007
54	1.3498-006	1.7283-006	146	2.8793-007	1.3070-007
56	1.0128-006	1.4797-006	148	6.2089-007	4.3640-007
58	1.4121-006	1.7439-006	150	1.6444-006	9.7084-007
60	2.1062-006	2.0980-006	152	2.5955-006	1.3500-006
62	2.4810-006	2.1489-006	154	2.7322-006	1.2763-006
64	2.1729-006	1.7963-006	156	1.9491-006	7.8064-007
66	1.3277-006	1.2566-006	158	9.0301-007	2.1802-007
68	4.9588-007	8.5805-007	160	5.2111-007	1.0356-008
70	2.2189-007	7.8224-007	162	1.2712-006	3.3182-007
72	6.3107-007	9.4719-007	164	2.7776-006	9.8344-007
74	1.3345-006	1.1049-006	166	4.0961-006	1.5558-006
76	1.7337-006	1.0566-006	168	4.4296-006	1.7496-006
78	1.4885-006	8.0562-007	170	3.7128-006	1.5988-006
80	7.7745-007	5.3228-007	172	2.6055-006	1.4202-006
82	1.4177-007	4.2431-007	174	1.9258-006	1.5351-006
84	4.5011-008	5.1474-007	176	2.0048-006	1.9937-006
86	5.0724-007	6.6239-007	178	2.4944-006	2.5260-006
88	1.1084-006	6.8481-007	180	2.7603-006	2.7603-006
90	1.3453-006	5.2287-007			

X = 14

Q = 2.427061

θ	I_1	I_2	θ	I_1	I_2
0	5.1999-004	5.1999-004	92	2.6543-007	5.7715-007
2	4.8530-004	4.8880-004	94	8.6147-007	7.5527-007
4	3.9417-004	4.0[illegible]5-004	96	1.2384-006	6.7119-007
6	2.7826-004	2.9566-004	98	1.0446-006	3.7122-007
8	1.7140-004	1.8866-004	100	4.8511-007	1.4854-007
10	9.4211-005	1.0524-004	102	1.1180-007	2.3807-007
12	4.8971-005	5.2079-005	104	2.6661-007	5.6148-007
14	2.5635-005	2.3982-005	106	7.4457-007	7.9101-007
16	1.2698-005	1.0976-005	108	1.0197-006	6.7724-007
18	4.5237-006	4.8984-006	110	7.9391-007	3.1152-007
20	1.3048-006	2.0518-006	112	2.9543-007	5.0136-008
22	4.1571-006	1.8819-006	114	2.0139-008	1.6499-007
24	1.1005-005	4.2352-006	116	1.9811-007	5.6681-007
26	1.6870-005	7.7833-006	118	5.5950-007	8.8335-007
28	1.7583-005	1.0439-005	120	6.5250-007	8.2270-007
30	1.3014-005	1.0769-005	122	3.6654-007	4.6176-007
32	6.8374-006	8.9103-006	124	7.8027-008	1.6846-007
34	3.2716-006	6.2691-006	126	2.3304-007	2.3210-007
36	3.8017-006	4.4153-006	128	8.0633-007	5.7471-007
38	6.5545-006	4.0875-006	130	1.2529-006	8.4045-007
40	8.4135-006	4.9278-006	132	1.0712-006	7.7719-007
42	7.6965-006	5.9395-006	134	4.1783-007	5.1746-007
44	5.1380-006	6.2166-006	136	8.3028-008	4.5428-007
46	2.7340-006	5.4690-006	138	7.4863-007	8.1801-007
48	1.8573-006	4.0957-006	140	2.2212-006	1.3841-006
50	2.3475-006	2.8453-006	142	3.4528-006	1.6389-006
52	3.0776-006	2.3047-006	144	3.4381-006	1.2777-006
54	3.1412-006	2.5302-006	146	2.1844-006	5.5285-007
56	2.4973-006	3.0527-006	148	7.9489-007	9.5361-008
58	1.6920-006	3.2501-006	150	5.0580-007	3.3717-007
60	1.1904-006	2.8205-006	152	1.5423-006	1.0749-006
62	1.0365-006	1.9932-006	154	2.8854-006	1.6204-006
64	1.0276-006	1.3115-006	156	3.2189-006	1.4382-006
66	1.0321-006	1.1670-006	158	2.1709-006	6.7999-007
68	1.0581-006	1.4825-006	160	6.9159-007	8.9750-008
70	1.0904-006	1.8107-006	162	1.6626-007	3.2902-007
72	9.9977-007	1.7491-006	164	1.1186-006	1.3433-006
74	6.9172-007	1.2891-006	166	2.7432-006	2.3867-006
76	3.0353-007	7.8902-007	168	3.7192-006	2.7228-006
78	1.5126-007	6.1480-007	170	3.5145-006	2.3628-006
80	4.1445-007	8.0093-007	172	2.8993-006	2.1262-006
82	8.8964-007	1.0476-006	174	3.1585-006	2.9095-006
84	1.1264-006	1.0362-006	176	4.7593-006	4.7956-006
86	8.6149-007	7.4106-007	178	6.7834-006	6.8274-006
88	3.1469-007	4.3143-007	180	7.7039-006	7.7039-006
90	9.8930-009	3.7917-007			

X = 15

Q = 2.709481

θ	I_1	I_2	θ	I_1	I_2
0	8.3266-004	8.3266-004	92	4.6842-007	9.1558-007
2	7.7971-004	7.7510-004	94	2.7076-007	4.7177-007
4	6.3939-004	6.2365-004	96	1.0764-007	2.7262-007
6	4.5735-004	4.3038-004	98	1.9032-007	5.0444-007
8	2.8331-004	2.5124-004	100	4.6104-007	8.1257-007
10	1.5000-004	1.2145-004	102	6.4463-007	7.5041-007
12	6.5713-005	4.7125-005	104	5.6446-007	3.4585-007
14	2.1482-005	1.4093-005	106	3.5168-007	8.9158-008
16	3.5473-006	3.4466-006	108	2.8666-007	3.3978-007
18	1.4206-006	2.2124-006	110	4.5330-007	8.5964-007
20	8.2538-006	4.7280-006	112	6.2780-007	1.0546-006
22	1.7769-005	8.6480-006	114	5.5071-007	6.7172-007
24	2.3463-005	1.1773-005	116	2.5861-007	1.3395-007
26	2.1418-005	1.2235-005	118	5.9872-008	8.7127-008
28	1.3167-005	1.0064-005	120	1.6426-007	6.5210-007
30	4.6608-006	7.2466-006	122	4.1562-007	1.2523-006
32	1.4871-006	5.8744-006	124	4.7705-007	1.2485-006
34	4.4465-006	6.3674-006	126	2.6678-007	6.7205-007
36	9.4129-006	7.5140-006	128	1.0071-007	2.0270-007
38	1.1358-005	7.9597-006	130	3.1899-007	3.9096-007
40	8.6598-006	7.4011-006	132	8.1578-007	1.0150-006
42	3.9104-006	6.4328-006	134	1.0766-006	1.3388-006
44	9.7476-007	5.6183-006	136	7.6877-007	1.0011-006
46	1.4411-006	4.9924-006	138	2.3330-007	4.9466-007
48	3.6890-006	4.3841-006	140	2.4067-007	6.2435-007
50	4.9542-006	3.8410-006	142	1.1674-006	1.5170-006
52	3.9981-006	3.7401-006	144	2.4690-006	2.3463-006
54	1.8704-006	3.9147-006	146	3.1004-006	2.1822-006
56	4.5502-007	3.9278-006	148	2.5328-006	1.0729-006
58	5.8549-007	3.3664-006	150	1.3164-006	1.0569-007
60	1.5426-006	2.4254-006	152	5.5649-007	2.7371-007
62	2.0825-006	1.7872-006	154	8.1522-007	1.3524-006
64	1.6860-006	1.8930-006	156	1.5829-006	2.0870-006
66	8.2057-007	2.4219-006	158	1.8677-006	1.5893-006
68	2.3378-007	2.6057-006	160	1.2612-006	4.3989-007
70	2.0531-007	2.0593-006	162	3.4180-007	1.9113-007
72	4.6520-007	1.2030-006	164	2.0822-008	1.6768-006
74	6.3625-007	7.9760-007	166	5.9366-007	3.9315-006
76	5.9520-007	1.1107-006	168	1.5404-006	5.0089-006
78	4.3964-007	1.6433-006	170	2.2423-006	3.9861-006
80	2.7089-007	1.7034-006	172	2.7373-006	2.0685-006
82	1.1877-007	1.1641-006	174	3.6190-006	1.5151-006
84	2.6876-008	5.6132-007	176	5.1912-006	3.3582-006
86	7.8715-008	4.5590-007	178	6.8760-006	6.2363-006
88	2.7922-007	8.1359-007	180	7.6143-006	7.6143-006
90	4.7220-007	1.0959-006			

X = 16

Q = 2.792617

θ	I_1	I_2	θ	I_1	I_2
0	1.1371-003	1.1371-003	92	1.1543-008	1.4840-007
2	1.0591-003	1.0504-003	94	1.8066-007	3.6160-007
4	8.5286-004	8.2499-004	96	4.3702-007	6.7186-007
6	5.8691-004	5.4378-004	98	5.4328-007	6.0445-007
8	3.3675-004	2.9302-004	100	4.1275-007	2.6166-007
10	1.5303-004	1.2264-004	102	2.2854-007	1.2184-007
12	4.8957-005	3.6189-005	104	2.2565-007	3.3925-007
14	8.8082-006	8.0040-006	106	4.0531-007	5.3736-007
16	5.9314-006	8.0095-006	108	5.5432-007	3.7385-007
18	1.7009-005	1.6024-005	110	5.3367-007	6.7898-008
20	2.7220-005	2.2374-005	112	4.3924-007	1.2020-007
22	2.9518-005	2.3205-005	114	4.2606-007	5.8330-007
24	2.3058-005	1.8165-005	116	4.6573-007	9.0874-007
26	1.2081-005	1.0457-005	118	3.9668-007	6.5299-007
28	3.3698-006	5.2386-006	120	1.9550-007	1.2783-007
30	1.7386-006	5.5430-006	122	5.7808-008	7.1954-008
32	6.4239-006	9.5570-006	124	1.3686-007	6.9438-007
34	1.1878-005	1.2518-005	126	3.0311-007	1.3349-006
36	1.2700-005	1.1437-005	128	3.0676-007	1.2538-006
38	8.2753-006	7.6648-006	130	1.6175-007	5.8293-007
40	2.7785-006	4.8241-006	132	1.9296-007	1.8884-007
42	7.7636-007	4.7973-006	134	5.9437-007	5.7148-007
44	2.9401-006	6.2116-006	136	1.0584-006	1.2107-006
46	5.9763-006	6.5979-006	138	1.0597-006	1.2499-006
48	6.3739-006	5.2649-006	140	5.5179-007	6.6433-007
50	3.8292-006	3.6340-006	142	1.9170-007	3.5962-007
52	1.0114-006	3.1540-006	144	6.7095-007	9.8326-007
54	4.2197-007	3.6175-006	146	1.8542-006	1.9626-006
56	1.9322-006	3.7527-006	148	2.7894-006	2.1069-006
58	3.3754-006	2.9858-006	150	2.6899-006	1.1245-006
60	3.0900-006	2.0486-006	152	1.7975-006	1.1358-007
62	1.4897-006	1.8517-006	154	1.0995-006	2.7056-007
64	2.3338-007	2.2664-006	156	1.2053-006	1.3546-006
66	3.0174-007	2.3804-006	158	1.6935-006	1.9186-006
68	1.1660-006	1.7605-006	160	1.6849-006	1.1809-006
70	1.6653-006	1.0066-006	162	9.3430-007	2.3365-007
72	1.3058-006	9.2040-007	164	1.3823-007	9.0399-007
74	5.5514-007	1.4405-006	166	1.3087-007	3.4429-006
76	1.0277-007	1.7362-006	168	9.6392-007	5.8517-006
78	1.3760-007	1.2929-006	170	1.9345-006	5.8822-006
80	3.6781-007	5.5691-007	172	2.4250-006	3.5359-006
82	4.9341-007	3.3577-007	174	2.4885-006	1.1300-006
84	4.6385-007	7.7039-007	176	2.5551-006	7.6102-007
86	3.5268-007	1.1983-006	178	2.7805-006	2.0734-006
88	1.9814-007	1.0270-006	180	2.9177-006	2.9177-006
90	4.4615-008	4.5540-007			

X = 17

Q = 2.656522

θ	I_1	I_2	θ	I_1	I_2
0	1.3278-003	1.3278-003	92	4.6685-007	6.7048-007
2	1.2216-003	1.2189-003	94	3.7928-007	6.5129-007
4	9.4560-004	9.3735-004	96	1.2425-007	2.7981-007
6	6.0336-004	5.9131-004	98	5.6983-009	4.2517-008
8	3.0380-004	2.9263-004	100	2.8296-007	1.4812-007
10	1.1106-004	1.0439-004	102	7.2259-007	3.0209-007
12	2.8499-005	2.6731-005	104	8.3892-007	2.2553-007
14	1.7979-005	1.9252-005	106	5.4445-007	6.1057-008
16	3.3176-005	3.5537-005	108	2.6946-007	7.7834-008
18	4.3505-005	4.5871-005	110	3.6688-007	2.1132-007
20	3.9554-005	4.1371-005	112	6.6182-007	1.9035-007
22	2.5880-005	2.6942-005	114	7.6138-007	2.9680-008
24	1.1454-005	1.2306-005	116	6.0747-007	5.4244-008
26	3.2995-006	5.1010-006	118	4.5986-007	3.6353-007
28	3.5292-006	6.7931-006	120	4.2586-007	5.8452-007
30	8.9461-006	1.2521-005	122	3.4971-007	3.8784-007
32	1.3443-005	1.5440-005	124	1.4566-007	4.3418-008
34	1.2581-005	1.2557-005	126	3.0573-008	1.1785-007
36	7.1284-006	6.8235-006	128	1.4920-007	6.5486-007
38	2.0887-006	3.4690-006	130	2.8282-007	1.0333-006
40	1.6917-006	4.4969-006	132	2.0141-007	7.9758-007
42	5.2208-006	7.1759-006	134	1.5587-007	3.1357-007
44	8.0698-006	7.6924-006	136	6.0344-007	2.6878-007
46	6.8694-006	5.3922-006	138	1.4027-006	6.8685-007
48	2.9935-006	2.8768-006	140	1.7398-006	8.9482-007
50	6.2792-007	2.4712-006	142	1.1738-006	5.4363-007
52	1.8526-006	3.6464-006	144	4.4225-007	1.9891-007
54	4.5080-006	4.2078-006	146	7.0554-007	5.5494-007
56	5.0873-006	3.2106-006	148	2.0195-006	1.3381-006
58	2.9002-006	1.8310-006	150	3.1146-006	1.5492-006
60	5.4580-007	1.4972-006	152	2.9579-006	8.4103-007
62	5.0660-007	2.0616-006	154	2.0808-006	1.0049-007
64	2.2826-006	2.2965-006	156	1.8245-006	2.8639-007
66	3.3758-006	1.6868-006	158	2.4668-006	1.0693-006
68	2.4698-006	9.8277-007	160	2.8158-006	1.2683-006
70	7.4803-007	9.7150-007	162	1.8978-006	6.3375-007
72	8.7276-008	1.3737-006	164	4.4287-007	4.8427-007
74	7.8566-007	1.3597-006	166	6.7306-008	2.0762-006
76	1.5801-006	7.9084-007	168	1.1909-006	4.7096-006
78	1.4543-006	3.7502-007	170	2.4769-006	6.1723-006
80	7.0216-007	6.0201-007	172	2.5155-006	5.1693-006
82	1.8922-007	1.0458-006	174	1.4641-006	2.7373-006
84	1.9745-007	9.9658-007	176	5.5894-007	9.1006-007
86	3.6553-007	4.5805-007	178	4.0989-007	4.4498-007
88	4.1391-007	9.9852-008	180	5.0995-007	5.0995-007
90	4.2604-007	3.0133-007			

X = 18

Q = 2.583614

θ	I_1	I_2	θ	I_1	I_2
0	1.5937-003	1.5937-003	92	9.8856-007	3.9480-007
2	1.4158-003	1.4386-003	94	3.7773-007	7.0368-008
4	9.8028-004	1.0470-003	96	3.1746-007	3.1838-007
6	5.0680-004	5.9227-004	98	7.4158-007	6.2693-007
8	1.8026-004	2.4057-004	100	6.3634-007	5.0343-007
10	4.8535-005	6.4597-005	102	8.0180-008	1.6155-007
12	4.1869-005	3.2418-005	104	2.0533-007	5.7983-008
14	6.4726-005	6.1021-005	106	1.1051-006	1.7622-007
16	6.6200-005	8.1644-005	108	1.4882-006	1.8757-007
18	4.6102-005	7.1125-005	110	8.4431-007	6.2754-008
20	2.3244-005	7.2417-005	112	3.8095-007	5.5518-008
22	9.6708-006	1.7560-005	114	1.0042-006	1.8139-007
24	6.1694-006	8.0341-006	116	1.7573-006	1.8309-007
26	8.3223-006	1.1144-005	118	1.4374-006	4.3510-008
28	1.1416-005	1.7081-005	120	6.3720-007	7.8206-008
30	1.2331-005	1.7887-005	122	6.7699-007	3.6537-007
32	1.0323-005	1.2500-005	124	1.2812-006	5.0980-007
34	6.9212-006	5.7942-006	126	1.1028-006	2.6107-007
36	4.6413-006	3.1535-006	128	2.2178-007	5.4484-009
38	5.0936-006	5.3465-006	130	1.2749-007	2.2140-007
40	7.5529-006	8.3742-006	132	1.0283-006	6.9165-007
42	9.2124-006	8.1936-006	134	1.3066-006	7.9130-007
44	7.7667-006	5.0153-006	136	4.8711-007	4.7425-007
46	4.3004-006	2.4307-006	138	6.0422-007	3.5720-007
48	2.5926-006	2.7903-006	140	2.9231-006	6.9340-007
50	4.5235-006	4.6206-006	142	5.0994-006	9.0371-007
52	7.2160-006	4.9767-006	144	4.1863-006	5.3233-007
54	6.5372-006	3.2782-006	146	1.4955-006	1.2467-007
56	2.8722-006	1.6514-006	148	1.2726-006	4.7115-007
58	9.0328-007	1.7856-006	150	4.3605-006	1.2706-006
60	3.1024-006	2.8294-006	152	6.5758-006	1.4095-006
62	6.0936-006	2.9366-006	154	4.8906-006	6.2807-007
64	5.3953-006	1.8834-006	156	2.1059-006	1.1964-008
66	1.8216-006	1.0719-006	158	2.4813-006	3.9436-007
68	2.0065-007	1.3075-006	160	4.9498-006	1.0846-006
70	2.3649-006	1.7798-006	162	4.8103-006	1.0416-006
72	4.7472-006	1.5124-006	164	1.5461-006	8.0158-007
74	3.8174-006	8.3694-007	166	2.3558-007	2.0075-006
76	1.0076-006	7.1244-007	168	3.7034-006	4.8953-006
78	1.1571-007	1.1590-006	170	7.5322-006	7.4444-006
80	1.6965-006	1.2841-006	172	6.2862-006	7.7567-006
82	2.8286-006	7.4036-007	174	1.8136-006	6.4606-006
84	1.8255-006	2.6239-007	176	6.6755-007	5.7157-006
86	3.3649-007	4.9585-007	178	4.2525-006	6.2639-006
88	2.6505-007	1.0037-006	180	6.7781-006	6.7781-006
90	9.9735-007	9.6146-007			

$\varkappa = 19$

$Q = 2.274454$

θ	I_1	I_2	θ	I_1	I_2
0	1.5930-003	1.5930-003	92	1.2004-007	9.6066-007
2	1.3833-003	1.4030-003	94	1.5383-007	1.5549-006
4	8.8297-004	9.4196-004	96	3.1020-007	9.7005-007
6	3.7282-004	4.5223-004	98	2.2446-007	1.4350-007
8	7.1993-005	1.3553-004	100	5.3921-008	2.5130-007
10	9.3186-006	3.6950-005	102	8.5539-009	8.2435-007
12	6.6982-005	6.6838-005	104	9.7047-009	7.7609-007
14	1.1485-004	1.0865-004	106	1.2914-008	2.4311-007
16	1.0194-004	1.0529-004	108	9.8358-008	9.2522-008
18	5.3318-005	6.7687-005	110	1.6802-007	3.2631-007
20	1.5229-005	3.1219-005	112	1.2478-007	2.9619-007
22	9.8122-006	1.5744-005	114	2.7460-007	3.9320-008
24	2.5678-005	1.7368-005	116	8.3571-007	1.1949-007
26	3.7015-005	2.2251-005	118	1.2187-006	4.2351-007
28	2.9886-005	2.1148-005	120	7.8438-007	3.5908-007
30	1.2985-005	1.4036-005	122	2.0086-007	8.4420-008
32	4.1857-006	6.5569-006	124	7.2710-007	2.8576-007
34	9.0741-006	3.8721-006	126	2.0157-006	7.9054-007
36	1.6676-005	6.3326-006	128	2.2394-006	7.2579-007
38	1.5527-005	9.6221-006	130	9.6185-007	1.4641-007
40	7.5492-006	9.3007-006	132	1.1726-007	9.4926-008
42	2.6942-006	5.5313-006	134	1.0270-006	7.5171-007
44	4.6871-006	2.6370-006	136	2.2028-006	1.0281-006
46	7.9363-006	3.5982-006	138	1.8681-006	5.4986-007
48	7.0161-006	6.2759-006	140	1.1333-006	4.5309-007
50	3.3792-006	6.4734-006	142	2.1997-006	1.2891-006
52	1.4529-006	3.7442-006	144	4.3235-006	1.7523-006
54	2.2676-006	1.7716-006	146	4.5331-006	8.8060-007
56	3.4320-006	2.8655-006	148	2.3503-006	2.6553-008
58	3.1627-006	4.7519-006	150	7.6124-007	7.4504-007
60	1.9001-006	4.2685-006	152	1.6486-006	1.9477-006
62	8.4090-007	2.0776-006	154	3.0683-006	1.5644-006
64	6.3328-007	1.2683-006	156	2.6094-006	2.1939-007
66	1.1996-006	2.4621-006	158	1.0160-006	3.2684-007
68	1.7883-006	3.2074-006	160	3.5970-007	1.7513-006
70	1.5177-006	2.1581-006	162	5.8856-007	1.8608-006
72	5.2591-007	1.0049-006	164	4.4263-007	6.6684-007
74	3.2836-008	1.3605-006	166	3.3331-007	1.9925-006
76	6.5475-007	2.1519-006	168	1.3992-006	7.1561-006
78	1.3998-006	1.7196-006	170	2.6072-006	1.1051-005
80	1.1321-006	6.9858-007	172	2.0295-006	8.5755-006
82	2.8788-007	7.6746-007	174	7.7271-007	2.7398-006
84	9.5734-008	1.6671-006	176	2.1333-006	1.2439-006
86	6.4665-007	1.6904-006	178	6.1494-006	5.4603-006
88	9.3223-007	6.6059-007	180	8.4378-006	8.4378-006
90	5.3983-007	2.0517-007			

X = 20

Q = 2.140107

θ	I_1	I_2	θ	I_1	I_2
0	1.7071-003	1.7071-003	92	5.6479-007	1.7274-006
2	1.4520-003	1.4252-003	94	6.5261-007	1.6045-007
4	8.5914-004	7.9280-004	96	1.8656-007	7.4569-007
6	2.9549-004	2.3899-004	98	1.7139-008	2.2359-006
8	2.2200-005	1.8143-005	100	9.6502-008	1.7544-006
10	2.9613-005	5.6768-005	102	1.1921-007	2.1665-007
12	1.2832-004	1.3535-004	104	1.5025-007	3.3470-007
14	1.5791-004	1.3220-004	106	4.3332-008	1.4917-006
16	1.0063-004	7.5352-005	108	7.2648-008	1.2930-006
18	3.2955-005	3.3543-005	110	1.4095-007	1.9107-007
20	1.4412-005	2.6415-005	112	9.2150-008	1.7683-007
22	3.5985-005	3.1561-005	114	2.7225-008	7.8816-007
24	5.2940-005	2.9308-005	116	2.[illegible]05-007	4.8359-007
26	4.1338-005	1.9846-005	118	7.[illegible]059-007	3.6056-009
28	1.6070-005	1.1844-005	120	1.0312-006	5.8882-007
30	3.9511-006	9.4930-006	122	6.9462-007	1.0744-006
32	1.1150-005	1.0347-005	124	1.4957-007	3.6069-007
34	2.0971-005	1.0631-005	126	3.5027-007	1.6472-007
36	1.8277-005	9.9149-006	128	1.3277-006	1.6834-006
38	7.1429-006	9.6842-006	130	1.8579-006	2.5762-006
40	1.5861-006	9.4413-006	132	1.2024-006	1.1410-006
42	5.6529-006	7.8295-006	134	3.4887-007	2.8627-008
44	1.0277-005	6.3748-006	136	5.2768-007	1.5346-006
46	7.9645-006	7.4080-006	138	1.2854-006	3.0203-006
48	2.3681-006	9.0313-006	140	1.4149-006	1.8228-006
50	8.5657-007	7.5606-006	142	2.1864-006	5.7472-007
52	3.7084-006	4.4343-006	144	1.8743-006	2.1441-006
54	5.3958-006	4.4447-006	146	3.2701-006	3.6545-006
56	3.4035-006	7.1679-006	148	3.6324-006	1.8667-006
58	7.6217-007	7.2048-006	150	2.4076-006	2.0619-009
60	5.5779-007	3.7158-006	152	1.1409-006	1.9440-006
62	1.9715-006	2.1417-006	154	1.0566-006	4.2458-006
64	2.5121-006	4.5694-006	156	1.4280-006	2.3358-006
66	1.5511-006	6.0656-006	158	1.1985-006	5.4446-008
68	4.0512-007	3.5978-006	160	6.8364-007	3.0513-006
70	2.3004-007	1.2378-006	162	5.9998-007	7.0705-006
72	8.6437-007	2.4935-006	164	6.8235-007	4.8186-006
74	1.3248-006	4.2185-006	166	4.2867-007	1.0429-006
76	9.7245-007	2.8782-006	168	2.5060-007	6.3403-006
78	2.3188-007	8.9494-007	170	8.2275-007	1.7185-005
80	5.1099-008	1.5868-006	172	2.0723-006	1.9417-005
82	5.9739-007	2.9793-006	174	3.6645-006	7.6231-006
84	9.9695-007	2.0148-006	176	5.6257-006	6.4472-008
86	6.4155-007	4.5057-007	178	7.6264-006	4.0598-006
88	8.8363-008	1.1805-006	180	8.5304-006	8.5304-006
90	1.2712-007	2.5618-006			

X = 22

Q = 1.861438

θ	I_1	I_2	θ	I_1	I_2
0	1.8046-003	1.8046-003	92	1.6404-006	5.2398-007
2	1.4947-003	1.5008-003	94	1.8268-006	3.8412-007
4	8.1396-004	8.3001-004	96	4.7805-007	1.2905-007
6	2.4782-004	2.6401-004	98	2.0416-007	3.2352-007
8	4.9263-005	5.5006-005	100	1.3647-006	5.4573-007
10	9.1841-005	8.6678-005	102	1.5319-006	2.6565-007
12	1.3021-004	1.2106-004	104	4.1964-007	4.8366-010
14	8.2901-005	7.6105-005	106	6.5871-008	2.6518-007
16	3.1321-005	2.9372-005	108	6.0518-007	5.5884-007
18	4.0632-005	4.2566-005	110	5.4679-007	3.7390-007
20	7.5079-005	7.7851-005	112	5.8945-008	6.2137-008
22	7.4192-005	7.5913-005	114	1.9025-007	5.5907-008
24	3.8777-005	4.1336-005	116	5.1384-007	2.0124-007
26	1.3476-005	1.9740-005	118	2.8612-007	2.1271-007
28	1.8356-005	2.6830-005	120	7.9949-008	1.0676-007
30	3.0739-005	3.6569-005	122	5.4863-007	5.1624-008
32	2.6032-005	2.8232-005	124	1.2069-006	1.0521-007
34	9.8960-006	1.3091-005	126	1.2583-006	1.2280-007
36	3.1356-006	9.5726-006	128	6.2921-007	2.1073-008
38	9.9970-006	1.5049-005	130	7.9779-008	1.0651-007
40	1.5290-005	1.5390-005	132	3.9398-007	6.0562-007
42	9.4094-006	8.8507-006	134	1.1698-006	9.8667-007
44	1.7167-006	5.1165-006	136	1.3434-006	6.7557-007
46	3.4973-006	7.1611-006	138	1.1569-006	1.5983-007
48	9.6000-006	8.3871-006	140	1.5827-006	1.9528-007
50	8.5039-006	5.6886-006	142	2.0268-006	4.8832-007
52	2.1308-006	3.3300-006	144	1.6303-006	4.7428-007
54	1.1030-006	3.7962-006	146	1.7867-006	4.4300-007
56	5.6423-006	4.3569-006	148	3.6165-006	6.0357-007
58	6.6094-006	3.3721-006	150	5.0350-006	4.3648-007
60	2.4461-006	2.5529-006	152	4.6122-006	5.8351-008
62	4.7019-007	2.5742-006	154	3.8668-006	3.4005-007
64	2.7456-006	2.2289-006	156	3.7219-006	9.9539-007
66	3.9442-006	1.6401-006	158	2.3980-006	9.8752-007
68	2.0533-006	1.8007-006	160	4.5440-007	9.1758-007
70	5.8757-007	2.0167-006	162	7.3229-007	1.9227-006
72	1.1859-006	1.3440-006	164	2.0281-006	2.7481-006
74	1.9273-006	7.5884-007	166	1.0594-006	1.7166-006
76	1.6509-006	1.1396-006	168	3.1443-007	5.7549-007
78	9.0902-007	1.4200-006	170	3.6101-006	2.0038[illegible]
80	4.0015-007	8.4113-007	172	7.2481-006	4.6033[illegible]
82	7.1881-007	4.2092-007	174	5.4755-006	4.9257[illegible]
84	1.5567-006	7.1990-007	176	1.1620-006	2.9373[illegible]
86	1.4022-006	8.3152-007	178	7.8673-008	1.2131-006
88	2.5299-007	4.4393-007	180	7.3114-007	7.3114-007
90	2.6567-007	3.2813-007			

X = 24

Q = 2.316390

θ	I_1	I_2	θ	I_1	I_2
0	4.0024-003	4.0024-003	92	9.2326-007	1.2966-006
2	3.3405-003	3.3206-003	94	7.2130-007	1.8614-006
4	1.9028-003	1.8471-003	96	1.4669-007	6.6586-007
6	6.9744-004	6.2894-004	98	1.6047-007	7.1648-007
8	1.6430-004	1.1599-004	100	8.7794-007	1.4867-006
10	4.3646-005	3.0509-005	102	1.1863-006	6.3233-007
12	7.9175-006	1.7252-005	104	5.6762-007	3.0159-007
14	9.9575-006	1.2176-005	106	2.0789-007	1.5019-006
16	7.0668-005	5.5159-005	108	8.8654-007	1.2847-006
18	1.0558-004	9.8167-005	110	1.3498-006	6.4931-008
20	6.3566-005	8.4812-005	112	6.4797-007	6.1838-007
22	2.0266-005	4.7187-005	114	5.5037-008	1.4753-006
24	3.7994-005	4.0471-005	116	5.1663-007	6.8142-007
26	6.6405-005	5.6044-005	118	7.7905-007	5.5933-009
28	4.8134-005	5.2375-005	120	2.5533-007	3.2826-007
30	1.5031-005	2.8040-005	122	3.2683-007	3.1781-007
32	1.6069-005	1.5195-005	124	9.3156-007	3.9403-008
34	3.2686-005	2.1751-005	126	4.9190-007	1.6637-007
36	2.6341-005	2.4551-005	128	1.7958-007	3.3251-007
38	8.2412-006	1.3721-005	130	2.0881-006	3.8448-007
40	7.6049-006	5.7459-006	132	3.7358-006	2.9459-007
42	1.6848-005	9.8803-006	134	2.0521-006	1.0363-007
44	1.3886-005	1.3245-005	136	2.8658-007	5.3355-007
46	4.0140-006	7.3616-006	138	2.3594-006	1.1154-006
48	3.5993-006	2.7931-006	140	5.0592-006	6.6544-007
50	8.8460-006	6.4804-006	142	4.3934-006	3.7718-007
52	7.6441-006	8.7827-006	144	2.9637-006	1.0322-006
54	2.3276-006	4.4321-006	146	3.6358-006	7.0373-007
56	1.5862-006	2.2918-006	148	3.9754-006	1.1795-008
58	4.2377-006	5.2780-006	150	2.4354-006	1.1964-006
60	4.0811-006	5.3894-006	152	1.7193-006	1.7705-006
62	1.4019-006	2.3971-006	154	2.8435-006	2.7267-007
64	6.9204-007	2.8991-006	156	3.2483-006	7.5163-007
66	2.2091-006	4.5066-006	158	1.8464-006	2.4290-006
68	2.4428-006	2.6694-006	160	3.8796-007	1.2360-006
70	8.0914-007	1.7027-006	162	1.1298-007	2.5732-006
72	2.5226-007	3.5494-006	164	4.6398-007	9.4039-006
74	1.4561-006	3.0762-006	166	6.1933-007	9.9489-006
76	1.7979-006	1.0645-006	168	8.3739-007	2.0062-006
78	5.6971-007	2.1606-006	170	2.0153-006	1.7139-006
80	6.0128-008	3.2854-006	172	4.0982-006	9.0791-006
82	9.4009-007	1.3733-006	174	6.2836-006	6.9125-006
84	1.3217-006	8.3487-007	176	8.7255-006	3.5014-007
86	5.4259-007	2.5572-006	178	1.1546-005	6.0553-006
88	2.4274-010	2.0380-006	180	1.2959-005	1.2959-005
90	4.1136-007	4.8351-007			

X = 26

Q = 2.496808

θ	I_1	I_2	θ	I_1	I_2
0	6.3573-003	6.3573-003	92	9.2718-007	1.3921-007
2	5.1985-003	5.2015-003	94	2.9419-007	6.7113-007
4	2.7451-003	2.7540-003	96	2.0187-008	9.5570-007
6	8.0928-004	8.2097-004	98	3.1032-007	2.3790-007
8	7.5408-005	8.4710-005	100	9.1742-007	1.5109-007
10	1.7017-005	2.2337-005	102	7.7020-007	6.3915-007
12	6.8509-005	6.6558-005	104	1.4207-007	4.2489-007
14	9.9723-005	8.5746-005	106	8.8931-007	1.0910-007
16	9.5266-005	7.7837-005	108	1.9113-006	2.5443-007
18	4.0470-005	3.6380-005	110	1.0886-006	1.9862-007
20	1.6285-005	2.2256-005	112	4.5745-007	1.7747-007
22	6.3562-005	6.0828-005	114	1.5719-006	5.5514-007
24	8.6658-005	7.6919-005	116	1.7513-006	4.6390-007
26	4.1077-005	4.2910-005	118	3.9996-007	1.0588-008
28	1.4038-005	2.5564-005	120	1.9417-007	4.4502-007
30	4.0560-005	4.4093-005	122	8.4573-007	1.1644-006
32	4.8561-005	4.6066-005	124	4.9509-007	7.3627-007
34	1.8060-005	2.4289-005	126	3.2780-007	6.2890-008
36	7.5430-006	1.8343-005	128	1.0809-006	4.2969-007
38	2.4320-005	2.6744-005	130	8.1896-007	9.1146-007
40	2.2676-005	2.2231-005	132	1.1650-007	8.3034-007
42	4.9866-006	1.1729-005	134	1.7484-006	9.2503-007
44	5.7004-006	1.2243-005	136	4.0235-006	9.2839-007
46	1.5862-005	1.5012-005	138	3.1958-006	3.8099-007
48	1.0348-005	1.0678-005	140	1.1454-006	4.3604-007
50	1.1594-006	6.7603-006	142	1.9373-006	1.2981-006
52	5.0960-005	7.3832-006	144	4.3652-006	1.3828-006
54	9.3900-006	7.5246-006	146	5.1835-006	5.1715-007
56	4.0026-006	5.6853-006	148	4.8335-006	1.3824-008
58	6.5613-007	4.3339-006	150	4.8784-006	2.5177-007
60	4.2768-006	4.1302-006	152	4.3460-006	7.1122-007
62	5.0265-006	4.0517-006	154	2.3209-006	9.4347-007
64	1.2467-006	3.2619-006	156	9.1080-007	1.0604-006
66	7.8305-007	2.4454-006	158	1.5759-006	1.4526-006
68	3.4526-006	2.5334-006	160	1.6910-006	1.7386-006
70	2.8910-006	2.4474-006	162	2.3426-007	2.0191-006
72	2.8233-007	1.6451-006	164	5.8950-007	3.3943-006
74	9.8866-007	1.4845-006	166	2.3012-006	4.2799-006
76	2.9803-006	1.6771-006	168	1.8886-006	2.1898-006
78	1.7152-006	1.1687-006	170	2.7666-006	3.4085-008
80	4.5144-009	9.5230-007	172	7.8561-006	1.1794-006
82	1.2530-006	1.1710-006	174	1.0093-005	2.5172-006
84	2.1348-006	7.3076-007	176	6.0873-006	1.7472-006
86	6.8371-007	5.3037-007	178	2.6054-006	1.5795-006
88	4.8880-008	1.0376-006	180	2.1073-006	2.1073-006
90	8.6761-007	7.3192-007			

X = 28

Q = 2.278066

θ	I_1	I_2
0	7.2726-003	7.2726-003
2	5.5778-003	5.6129-003
4	2.3100-003	2.3898-003
6	3.3263-004	3.9561-004
8	9.6980-005	1.1216-004
10	2.9717-004	2.8753-004
12	2.2782-004	2.2033-004
14	6.9150-005	7.2255-005
16	1.0088-005	1.2845-005
18	3.7673-005	2.7314-005
20	7.5904-005	6.6896-005
22	5.6176-005	6.5816-005
24	1.9957-005	3.1576-005
26	3.9438-005	3.8616-005
28	6.2413-005	6.5482-005
30	3.5548-005	4.7963-005
32	1.8540-005	2.4454-005
34	3.6040-005	3.5849-005
36	3.3574-005	3.8511-005
38	1.3965-005	1.9599-005
40	1.6454-005	1.7336-005
42	2.4164-005	2.4235-005
44	1.3727-005	1.5932-005
46	6.5641-006	8.9742-006
48	1.2529-005	1.2671-005
50	1.2492-005	1.1656-005
52	4.9450-006	6.8592-006
54	4.8477-006	6.7960-006
56	8.6598-006	7.0300-006
58	5.1659-006	5.4312-006
60	1.6091-006	4.6500-006
62	5.1022-006	4.2108-006
64	5.5324-006	4.1277-006
66	9.2158-007	3.6841-006
68	2.0907-006	2.5098-006
70	5.1892-006	2.9734-006
72	2.0952-006	3.2716-006
74	1.9905-007	1.7264-006
76	3.3851-006	1.9001-006
78	3.1749-006	2.6065-006
80	1.8362-007	1.3832-006
82	1.2118-006	1.3745-006
84	2.7820-006	1.8243-006
86	9.7593-007	8.7526-007
88	8.9340-008	1.3019-006
90	1.3743-006	1.5959-006
92	1.2188-006	3.7949-007
94	9.8411-008	1.1296-006
96	2.6586-007	1.8080-006
98	6.6730-007	3.1280-007
100	4.1608-007	6.3455-007
102	1.4759-007	1.6593-006
104	3.3138-008	5.3875-007
106	4.9174-007	2.2846-007
108	1.0261-006	9.1640-007
110	4.0137-007	5.4654-007
112	5.0466-007	4.1140-007
114	2.1604-006	4.6986-007
116	1.7588-006	1.9047-007
118	4.0608-007	7.8956-007
120	2.0620-006	1.0900-006
122	2.7086-006	2.2144-007
124	3.6078-007	3.0799-007
126	7.3378-007	1.2694-006
128	2.0974-006	1.1586-006
130	8.6960-007	4.3598-007
132	2.3096-006	2.9495-007
134	4.1858-006	6.7487-007
136	1.2653-006	1.1402-006
138	2.8970-006	1.2080-006
140	9.7792-006	8.3298-007
142	8.0317-006	4.1509-007
144	2.7279-006	1.7970-007
146	5.5836-006	1.6573-007
148	7.5081-006	1.1077-006
150	4.3002-006	3.6463-007
152	5.1277-006	2.4782-007
154	6.2550-006	1.6518-006
156	2.0613-006	1.6870-006
158	8.9052-008	2.5625-006
160	1.3137-006	5.6123-006
162	4.4499-007	3.8228-006
164	1.1744-006	6.1761-007
166	4.0375-006	4.1209-006
168	2.6472-006	4.4444-006
170	6.2051-007	5.3913-008
172	4.6946-006	4.9278-006
174	9.2464-006	9.7886-006
176	8.3699-006	3.7254-006
178	6.0952-006	2.2322-006
180	5.5433-006	5.5433-006

X = 30

Q = 1.998410

θ	I_1	I_2	θ	I_1	I_2
0	7.3805-003	7.3805-003	92	1.1285-006	7.5849-007
2	5.1723-003	5.1804-003	94	8.6229-008	5.6792-007
4	1.4307-003	1.4459-003	96	1.0525-006	8.4515-007
6	4.8033-006	5.5788-006	98	1.1621-006	3.7220-007
8	3.9458-004	3.7700-004	100	1.1588-007	3.4650-007
10	4.8292-004	4.7251-004	102	5.7745-007	1.1928-006
12	1.3674-004	1.5069-004	104	5.9125-007	4.2240-007
14	3.2860-005	5.0970-005	106	1.3631-008	2.2149-007
16	1.2394-004	1.1396-004	108	1.3322-007	1.4131-006
18	1.3224-004	1.0405-004	110	2.9565-008	6.4800-007
20	4.6167-005	3.9442-005	112	5.0486-007	8.5107-008
22	1.6817-005	2.2396-005	114	6.4107-007	1.0143-006
24	7.9861-005	6.1795-005	116	2.6139-007	5.6695-007
26	8.1502-005	6.3763-005	118	1.9672-006	2.6979-007
28	1.8992-005	2.8754-005	120	2.2285-006	5.7700-007
30	3.5672-005	3.8390-005	122	4.3229-007	2.7360-007
32	6.6502-005	5.4611-005	124	2.2686-006	1.3930-006
34	2.4829-005	3.2116-005	126	3.3177-006	1.6417-006
36	1.4108-005	2.6255-005	128	4.7344-007	1.0068-007
38	4.1994-005	3.7555-005	130	9.6949-007	1.7379-006
40	2.2412-005	2.6080-005	132	2.4956-006	3.2546-006
42	4.6055-006	1.7363-005	134	1.5695-006	1.1241-006
44	2.3102-005	2.3065-005	136	4.0383-006	9.3785-007
46	1.7903-005	1.9062-005	138	5.2321-006	1.8802-006
48	2.0710-006	1.2524-005	140	1.6693-006	1.2129-006
50	1.1138-005	1.3453-005	142	4.7100-006	2.0948-006
52	1.2192-005	1.2168-005	144	1.0794-005	1.9505-006
54	1.5829-006	9.0286-006	146	7.6580-006	5.4871-008
56	5.4737-006	8.4070-006	148	3.8567-006	1.2232-006
58	8.5027-006	7.6942-006	150	5.2063-006	1.8867-006
60	1.6049-006	6.1913-006	152	3.6067-006	4.0724-007
62	2.2166-006	5.1787-006	154	1.8475-006	1.7498-006
64	5.8248-006	4.8313-006	156	2.9912-006	2.8564-006
66	2.1009-006	4.4341-006	158	1.3540-006	2.9582-006
68	4.9510-007	3.3964-006	160	7.3946-007	6.6429-006
70	3.2117-006	2.7702-006	162	2.8829-006	7.0280-006
72	2.2008-006	3.0452-006	164	2.1910-006	1.5519-006
74	1.3325-007	2.6137-006	166	3.7950-006	4.8627-007
76	1.3627-006	1.5941-006	168	6.6923-006	1.5484-006
78	1.8765-006	1.8292-006	170	2.4159-006	7.3577-007
80	3.6322-007	2.0356-006	172	3.8976-007	6.6952-006
82	3.9227-007	1.0765-006	174	4.2621-006	1.2530-005
84	1.5213-006	1.0417-006	176	3.4006-006	7.2536-006
86	7.7335-007	1.3873-006	178	2.0028-006	2.6090-006
88	4.2214-008	8.1059-007	180	3.1678-006	3.1678-006
90	1.2568-006	7.4562-007			

X = 32

Q = 1.964189

θ	I_1	I_2
0	8.9926-003	8.9926-003
2	6.2270-003	6.2160-003
4	1.7569-003	1.7261-003
6	1.8814-004	1.5090-004
8	3.8221-004	3.6196-004
10	2.1031-004	2.1823-004
12	6.6039-005	7.9337-005
14	2.3744-004	2.3154-004
16	2.1489-004	2.0688-004
18	5.7011-005	6.1777-005
20	5.1289-005	5.1668-005
22	9.7233-005	9.2936-005
24	5.5629-005	5.9587-005
26	1.6250-005	2.3250-005
28	4.8345-005	5.3526-005
30	5.2970-005	5.8426-005
32	1.6773-005	2.4925-005
34	2.8834-005	3.7011-005
36	4.1918-005	4.4916-005
38	1.4280-005	2.0156-005
40	1.8477-005	2.5616-005
42	3.2369-005	3.1522-005
44	1.0838-005	1.4591-005
46	1.1047-005	1.6538-005
48	2.2967-005	1.9629-005
50	6.8891-006	1.0020-005
52	7.5972-006	1.1267-005
54	1.6645-005	1.2431-005
56	3.4803-006	6.4746-006
58	5.9080-006	7.6108-006
60	1.2860-005	8.1598-006
62	1.8594-006	4.3927-006
64	4.4211-006	5.0495-006
66	9.0585-006	5.0992-006
68	1.0406-006	3.1705-006
70	2.9741-006	3.6988-006
72	5.3141-006	2.8546-006
74	5.1698-007	2.4220-006
76	1.8177-006	3.0001-006
78	2.7730-006	1.3960-006
80	3.9017-007	2.0704-006
82	8.4872-007	2.3196-006
84	1.4983-006	6.1389-007
86	6.2493-007	1.8916-006
88	1.4010-007	1.4949-006
90	1.0754-006	4.0284-007
92	1.1333-006	1.5091-006
94	3.1374-008	7.1302-007
96	1.2662-006	5.4628-007
98	1.6703-006	7.8659-007
100	2.6526-007	3.0742-007
102	1.3735-006	9.0358-007
104	1.5725-006	2.1301-007
106	2.4042-007	5.5727-007
108	7.9450-007	1.3261-006
110	5.4125-007	8.0324-008
112	1.3313-008	9.1984-007
114	2.2356-007	1.2239-006
116	3.7754-008	1.1890-008
118	8.5844-007	6.9585-007
120	6.8850-007	5.9611-007
122	1.2813-006	3.7934-007
124	2.9541-006	5.7032-007
126	8.5466-007	2.2611-007
128	1.8045-006	1.8486-006
130	3.9639-006	1.8419-006
132	8.0304-007	1.0315-007
134	2.1075-006	2.0313-006
136	3.1894-006	2.9221-006
138	2.9914-006	1.0903-006
140	1.0071-005	1.1980-006
142	7.9392-006	9.1227-007
144	2.9869-006	8.7848-007
146	1.0909-005	2.0890-006
148	1.1085-005	5.4093-007
150	6.1582-006	7.6115-007
152	6.9753-006	2.8600-006
154	2.4079-006	1.6716-006
156	6.1694-007	3.4831-006
158	2.2726-006	4.4308-006
160	4.4663-008	1.8514-006
162	2.3987-006	6.4604-006
164	3.1874-006	6.3431-006
166	3.3960-006	1.4776-007
168	9.9646-006	2.4399-006
170	6.9901-006	1.3585-006
172	1.5340-007	7.4920-006
174	3.5929-006	2.5024-005
176	3.9489-006	1.8521-005
178	4.5465-007	2.5949-006
180	1.6165-007	1.6165-007

X = 34

Q = 2.340649

θ	I_1	I_2	θ	I_1	I_2
0	1.6280-002	1.6280-002	92	6.3050-008	2.0522-006
2	1.1277-002	1.1187-002	94	7.7295-007	1.5786-006
4	3.2208-003	3.1786-003	96	6.7864-007	3.1672-007
6	2.9664-004	2.1454-004	98	8.4545-008	1.8742-006
8	7.4199-005	6.5182-005	100	2.6284-007	5.1266-007
10	1.5934-005	1.0632-005	102	1.2119-006	6.9100-007
12	2.8878-004	2.4490-004	104	6.4164-007	7.7443-007
14	2.7098-004	2.8388-004	106	1.2822-006	4.1723-007
16	5.0960-005	1.0306-004	108	2.2165-006	9.8662-007
18	1.2683-004	1.3662-004	110	9.0924-007	2.3497-008
20	1.6056-004	1.4718-004	112	2.0308-006	1.5420-006
22	3.9988-005	5.6196-005	114	1.2339-006	9.4001-007
24	4.4650-005	4.6606-005	116	3.6227-007	4.3158-007
26	1.0272-004	6.8360-005	118	8.9972-007	2.2191-006
28	4.0245-005	4.0330-005	120	3.9421-008	2.7334-007
30	2.9116-005	2.9653-005	122	1.7018-006	9.1734-007
32	7.5141-005	4.6614-005	124	3.1734-007	1.0814-006
34	2.8285-005	3.5226-005	126	2.7989-006	7.2061-007
36	2.6374-005	2.8231-005	128	5.7434-006	1.6468-006
38	5.3582-005	3.7381-005	130	1.8786-007	2.8156-007
40	1.5459-005	2.9643-005	132	5.3210-006	4.3579-006
42	2.1568-005	2.2821-005	134	7.2031-006	3.4865-006
44	3.1597-005	2.7191-005	136	2.1282-006	5.0850-007
46	7.7825-006	2.3146-005	138	7.4436-006	4.9707-006
48	1.6632-005	1.6659-005	140	5.0916-006	2.7357-006
50	1.6251-005	1.9783-005	142	9.1591-006	2.2428-006
52	4.1018-006	1.5720-005	144	1.7197-005	2.2084-006
54	1.1294-005	1.1302-005	146	5.9974-006	4.2351-007
56	8.8445-006	1.5426-005	148	6.2139-006	4.3095-006
58	2.3044-006	9.3888-006	150	1.0445-005	9.5634-007
60	6.7583-006	8.1477-006	152	3.6166-006	2.4684-006
62	5.6920-006	1.1277-005	154	3.1315-006	5.9222-006
64	1.1174-006	5.1554-006	156	8.7751-007	4.3619-006
66	4.6564-006	6.7133-006	158	2.4278-006	1.1229-005
68	3.8310-006	6.7111-006	160	4.1446-006	5.8760-006
70	3.9706-007	3.3066-006	162	1.4489-006	1.3315-006
72	4.2406-006	5.4490-006	164	6.1123-006	5.9982-006
74	2.1066-006	3.1602-006	166	2.9351-006	3.8109-007
76	6.2242-007	3.1550-006	168	1.6764-006	6.0368-006
78	4.2043-006	3.5889-006	170	4.5053-006	5.8040-006
80	8.9988-007	1.5313-006	172	8.9971-007	5.2446-006
82	1.5072-006	3.2269-006	174	7.7889-006	2.6317-005
84	3.5064-006	1.5850-006	176	8.3987-006	1.7308-005
86	3.3637-007	1.5143-006	178	5.3539-006	3.1610-006
88	1.6698-006	2.6750-006	180	9.4565-006	9.4565-006
90	1.8766-006	4.1063-007			

X = 36

Q = 2.365363

θ	I_1	I_2
0	2.1075-002	2.1075-002
2	1.4165-002	1.4105-002
4	3.6150-003	3.5569-003
6	8.1808-005	8.7406-005
8	1.8353-004	1.6472-004
10	2.3455-004	2.0709-004
12	2.2974-004	2.1824-004
14	5.3363-005	6.4108-005
16	1.3101-004	1.4138-004
18	2.5624-004	2.3578-004
20	6.1270-005	8.4574-005
22	8.2224-005	8.9348-005
24	1.5052-004	1.3247-004
26	4.2997-005	4.7640-005
28	4.5740-005	5.4350-005
30	8.5691-005	7.9282-005
32	1.9400-005	3.0001-005
34	3.7359-005	4.8012-005
36	5.2631-005	5.0565-005
38	7.0106-006	2.0975-005
40	3.5707-005	4.1003-005
42	2.8386-005	2.7933-005
44	5.5068-006	1.9429-005
46	3.0447-005	2.7839-005
48	9.3337-006	1.4169-005
50	1.0360-005	1.7797-005
52	2.0843-005	1.5421-005
54	1.4073-006	9.8608-006
56	1.2873-005	1.2080-005
58	9.3483-006	8.5625-006
60	1.3987-006	8.0861-006
62	9.5945-006	6.3050-006
64	2.3528-006	6.4209-006
66	2.9078-006	5.0806-006
68	5.1778-006	3.8776-006
70	5.4412-007	4.8090-006
72	2.7771-006	2.3898-006
74	3.0087-006	3.5907-006
76	7.7623-008	2.3801-006
78	2.6976-006	1.8860-006
80	2.2767-006	2.5937-006
82	2.0129-007	9.6740-007
84	3.4608-006	1.9675-006
86	1.4350-006	8.4337-007
88	9.8412-007	1.3260-006
90	2.9742-006	6.2949-007
92	4.9588-007	7.2297-007
94	1.0232-006	1.4719-006
96	1.2960-006	2.4219-008
98	7.6432-008	1.6729-006
100	2.9153-007	5.0542-007
102	8.7001-007	6.0333-007
104	5.3326-007	1.0749-006
106	6.3691-007	5.7076-009
108	2.0297-006	5.3901-007
110	1.5139-006	3.3559-008
112	1.7243-006	4.0225-007
114	2.2159-006	3.1808-008
116	1.3757-006	9.6445-007
118	7.5070-007	5.5584-007
120	5.7955-007	8.2386-007
122	1.5658-007	1.5350-006
124	3.8792-007	1.2672-008
126	1.0750-006	1.0934-006
128	2.2684-007	5.7282-007
130	4.3579-006	1.5277-006
132	3.3407-006	7.5952-007
134	4.3464-007	1.5810-006
136	6.4237-006	4.9569-006
138	5.1035-006	9.5939-007
140	6.5603-006	1.7531-006
142	6.6538-006	2.4143-006
144	6.1394-006	1.2233-006
146	1.5346-005	1.4022-006
148	1.0519-005	2.2515-007
150	4.7379-006	4.0721-006
152	4.2055-006	1.7035-006
154	1.8685-006	3.1364-006
156	1.8019-006	5.7113-006
158	1.4167-007	4.8645-006
160	3.0716-006	9.9304-006
162	4.4667-006	2.5908-006
164	6.8706-006	1.2215-006
166	5.9014-006	1.8349-006
168	2.5396-007	5.2187-006
170	1.4020-006	1.3576-005
172	1.2704-007	1.5284-006
174	6.2522-006	9.9006-006
176	1.3298-005	1.1949-005
178	7.9030-006	9.2386-009
180	4.2927-006	4.2927-006

X = 38

Q = 2.216969

θ	I_1	I_2	θ	I_1	I_2
0	2.3261-002	2.3261-002	92	2.0524-007	7.6087-007
2	1.3593-002	1.4196-002	94	3.4510-006	1.9984-006
4	1.6696-003	2.2327-003	96	1.7786-006	3.1965-007
6	3.3119-004	2.9656-004	98	1.6091-006	2.0939-006
8	7.6553-004	8.2946-004	100	2.6761-006	9.2856-007
10	1.9598-004	2.3248-004	102	1.1835-007	9.8593-007
12	1.0195-005	1.1168-005	104	1.1250-006	2.1868-006
14	1.4607-004	7.5951-005	106	1.7973-007	2.5350-008
16	2.5064-004	2.1428-004	108	3.9769-007	1.7012-006
18	8.1481-005	1.2118-004	110	6.3137-007	2.2845-007
20	1.4996-004	1.2909-004	112	3.0663-006	4.9342-007
22	1.4453-004	1.9090-004	114	1.6738-006	9.5383-008
24	4.1748-005	8.4061-005	116	5.3832-006	6.5534-007
26	8.5260-005	9.3420-005	118	3.0568-006	2.7935-007
28	6.2350-005	9.8163-005	120	4.2048-006	9.6884-007
30	2.8165-005	3.8531-005	122	2.3960-006	9.5414-007
32	5.9394-005	5.8705-005	124	1.4398-006	8.2865-007
34	3.4262-005	4.6142-005	126	1.3012-006	8.8134-007
36	3.0950-005	2.2840-005	128	2.1877-006	9.9096-008
38	4.5657-005	4.4957-005	130	4.9128-006	5.9369-007
40	2.3972-005	2.3065-005	132	1.2383-006	1.0237-006
42	2.9424-005	2.3128-005	134	1.5237-005	2.8173-006
44	3.0453-005	3.0974-005	136	3.2984-006	9.2702-008
46	1.6300-005	1.2597-005	138	1.0194-005	4.8476-006
48	2.6772-005	2.6182-005	140	1.3381-005	3.0915-006
50	1.7009-005	1.4581-005	142	1.3680-005	1.2885-006
52	1.2380-005	1.4316-005	144	2.2065-005	1.4642-006
54	2.3991-005	1.8687-005	146	6.2575-006	1.5677-006
56	4.2121-006	7.5926-006	148	2.2914-005	2.4289-006
58	1.8107-005	1.5085-005	150	1.2381-005	5.9674-007
60	9.6194-006	7.5870-006	152	4.2352-006	6.2159-006
62	6.2612-006	9.9074-006	154	1.9977-006	3.8785-006
64	1.5047-005	7.6407-006	156	3.2931-006	8.9971-006
66	4.5818-007	6.3306-006	158	4.6831-006	3.8652-006
68	1.3742-005	7.2161-006	160	3.6860-006	6.8952-006
70	3.0163-006	4.0408-006	162	1.3872-005	7.4741-006
72	5.8464-006	6.1814-006	164	4.4688-006	2.5983-007
74	7.6947-006	2.7124-006	166	1.0604-005	3.5705-006
76	2.9583-007	5.2820-006	168	1.5818-006	5.6809-006
78	5.8101-006	2.0840-006	170	9.5768-006	2.5645-005
80	1.1346-006	3.7808-006	172	3.7451-006	7.7650-006
82	1.2735-006	2.7266-006	174	1.4872-005	7.4891-006
84	2.1780-006	1.7366-006	176	2.9388-005	1.0986-005
86	8.6178-007	2.9985-006	178	2.7012-005	1.8060-005
88	7.2575-007	9.2174-007	180	5.1139-005	5.1139-005
90	3.1154-006	2.1956-006			

X = 40

Q = 1.987636

θ	I_1	I_2
0	2.2796-002	2.2796-002
2	1.2321-002	1.2086-002
4	8.0704-004	6.8554-004
6	8.7014-004	9.0336-004
8	9.5478-004	8.8323-004
10	6.5715-005	6.9765-005
12	2.5292-004	2.3001-004
14	2.6713-004	2.4120-004
16	5.1775-005	6.2134-005
18	1.1521-004	1.3395-004
20	2.3252-004	2.0527-004
22	5.0348-005	6.6876-005
24	1.5507-004	1.4408-004
26	1.3253-004	1.0338-004
28	3.7199-005	5.5050-005
30	1.2755-004	9.7207-005
32	3.3624-005	4.1989-005
34	5.9270-005	6.1624-005
36	6.3748-005	5.3108-005
38	1.1993-005	3.5007-005
40	5.7847-[illegible]	4.8125-005
42	1.1307-005	2.9737-005
44	3.0022-005	3.5177-005
46	2.2956-005	2.7067-005
48	8.0218-006	2.4390-005
50	2.6729-005	2.2688-005
52	2.4441-006	1.9683-005
54	1.6303-005	1.4612-005
56	7.2145-006	1.7590-005
58	5.3976-006	9.9642-006
60	9.6307-006	1.3002-005
62	9.7615-007	8.4602-006
64	7.7807-006	8.5413-006
66	2.2423-006	7.8694-006
68	3.0317-006	4.7721-006
70	5.5313-006	7.3041-006
72	5.5685-008	2.6139-006
74	5.3651-006	5.5573-006
76	1.2422-006	1.9319-006
78	2.1345-006	4.0334-006
80	2.9297-006	1.2072-006
82	1.2937-007	3.5296-006
84	2.4403-006	6.8907-007
86	3.3589-007	2.8301-006
88	7.4416-007	1.0338-006
90	1.1877-006	1.5503-006
92	1.8524-008	1.4715-006
94	1.0238-006	5.3816-007
96	9.3573-007	1.1202-006
98	3.9228-007	3.2035-007
100	1.6887-006	5.5513-007
102	3.6737-007	4.7847-007
104	9.0882-007	9.4553-007
106	5.1451-007	5.7010-007
108	2.1147-008	1.7986-006
110	4.5506-008	5.7350-007
112	5.6105-007	1.5496-006
114	6.7450-007	3.0078-007
116	1.4244-006	5.4679-007
118	3.3522-006	4.5695-008
120	1.6189-006	3.6698-007
122	3.4195-006	7.2849-007
124	2.5322-006	1.8792-006
126	2.9879-007	5.1454-007
128	1.9843-006	3.6017-006
130	1.0457-006	2.5823-007
132	4.8093-006	2.2784-006
134	4.6599-007	1.1785-006
136	9.4352-006	5.3465-006
138	1.0074-005	1.5279-006
140	4.1807-006	3.9125-006
142	1.1786-005	5.1590-006
144	1.1554-005	7.1540-007
146	1.5315-005	1.2038-006
148	6.6440-006	2.5495-006
150	5.5264-006	4.1705-006
152	6.2861-006	2.2921-006
154	1.3785-006	1.1765-005
156	1.3565-007	7.1587-006
158	3.1961-006	1.0278-005
160	5.2081-006	8.3691-007
162	4.2436-006	4.7609-006
164	2.6786-006	8.4675-007
166	2.5886-006	8.8573-006
168	9.5768-007	4.5391-006
170	7.1536-007	1.4013-005
172	2.5294-006	1.0820-005
174	6.4135-006	4.2863-006
176	1.9510-005	1.6281-005
178	2.1551-005	1.4713-006
180	1.8388-005	1.8388-005

X = 42

Q = 2.053203

θ	I_1	I_2	θ	I_1	I_2
0	2.9192-002	2.9192-002	92	1.7936-006	2.5361-006
2	1.5449-002	1.5871-002	94	1.2215-006	1.2121-007
4	1.2651-003	1.5116-003	96	5.7334-007	2.0394-006
6	7.6519-004	6.9675-004	98	9.0665-007	1.7300-007
8	3.1302-004	3.2909-004	100	2.4099-006	1.0343-006
10	3.6012-004	3.3291-004	102	6.7274-007	2.8564-007
12	4.9253-004	5.4383-004	104	4.6952-006	7.1993-007
14	8.2643-005	1.0247-004	106	7.1665-007	1.4955-007
16	8.8192-005	1.1037-004	108	4.0007-006	1.4804-006
18	1.9360-004	1.8682-004	110	3.4384-007	9.6105-008
20	8.2968-005	6.6608-005	112	1.6897-006	1.7825-006
22	1.3902-004	1.3501-004	114	1.7373-008	4.4009-007
24	1.7058-004	1.5839-004	116	2.4590-006	7.0436-007
26	6.1612-005	7.2162-005	118	1.1571-006	4.2174-007
28	1.3798-004	1.5009-004	120	5.7907-006	9.8618-008
30	5.3544-005	6.7057-005	122	3.3133-006	2.6259-008
32	6.3882-005	9.0893-005	124	4.3602-006	6.4548-007
34	6.3068-005	7.2104-005	126	3.3941-006	1.2187-006
36	1.7013-005	4.2830-005	128	3.2141-007	1.4815-007
38	6.0241-005	6.5529-005	130	1.1512-006	1.7405-006
40	9.7438-006	2.5001-005	132	5.5044-008	8.9401-007
42	4.0021-005	4.6298-005	134	6.2723-006	6.5782-007
44	1.9211-005	2.1229-005	136	2.3465-006	6.6772-007
46	2.0654-005	2.9520-005	138	6.3274-006	3.2761-006
48	3.0873-005	2.1493-005	140	1.3081-005	1.8036-006
50	6.0107-006	1.6859-005	142	1.2004-005	6.3691-007
52	3.3368-005	1.9203-005	144	1.2811-005	1.7800-006
54	2.1035-006	1.1795-005	146	1.6947-005	7.9782-007
56	2.6557-005	1.3996-005	148	2.4512-005	4.7639-008
58	4.0383-006	9.6066-006	150	9.4598-006	3.7328-006
60	1.7684-005	1.0021-005	152	6.3087-006	3.6024-006
62	7.9920-006	8.0642-006	154	2.8277-006	4.2142-006
64	7.9630-006	6.8008-006	156	2.5041-006	5.1247-006
66	1.0668-005	6.8805-006	158	4.7666-006	8.7114-006
68	2.3833-006	5.1822-006	160	1.2462-005	5.0023-006
70	8.7401-006	4.8431-006	162	1.4099-005	2.5486-007
72	3.1250-006	4.7840-006	164	1.3017-005	1.7144-006
74	4.4618-006	3.0068-006	166	9.8238-007	9.8443-006
76	6.1137-006	3.8982-006	168	5.0679-006	8.7626-006
78	1.2052-006	2.2858-006	170	8.0800-006	3.6725-006
80	7.7173-006	2.7128-006	172	1.7635-005	6.4690-006
82	3.3141-008	1.9444-006	174	3.8711-006	3.5480-006
84	7.2882-006	2.1949-006	176	3.3244-005	2.3860-005
86	2.8626-007	1.2962-006	178	9.2089-006	1.6586-005
88	4.9668-006	2.3679-006	180	1.9925-005	1.9925-005
90	1.0217-006	5.3528-007			

X = 44

Q = 2.354626

θ	I_1	I_2	θ	I_1	I_2
0	4.6184-002	4.6184-002	92	1.2751-006	4.9242-006
2	2.4755-002	2.3660-002	94	2.4477-006	7.9253-008
4	2.4286-003	1.8237-003	96	2.9252-007	5.4732-006
6	1.8055-004	1.6985-004	98	1.6589-006	2.4976-008
8	3.7124-005	6.4548-005	100	3.2439-007	5.1404-006
10	7.4111-004	7.1498-004	102	5.7850-007	6.6054-008
12	2.5712-004	2.2213-004	104	1.5581-006	3.4315-006
14	2.3511-004	2.3208-004	106	5.4666-007	1.4801-007
16	3.2670-004	2.2713-004	108	2.7422-006	1.7625-006
18	4.2630-005	7.0165-005	110	1.3180-006	1.0950-006
20	1.6537-004	1.6604-004	112	2.2312-006	1.9900-006
22	1.4090-004	1.4540-004	114	1.2155-006	2.5262-006
24	5.8784-005	1.1682-004	116	5.7052-007	2.7484-006
26	1.8255-004	1.4676-004	118	1.9180-007	2.2039-006
28	4.2999-005	8.6817-005	120	1.6232-006	1.3108-006
30	1.3759-004	9.3530-005	122	6.4364-007	8.6669-007
32	5.7071-005	6.5922-005	124	5.1204-006	2.2828-007
34	7.7857-005	5.3326-005	126	3.6313-006	1.6858-006
36	6.9876-005	5.5692-005	128	3.7150-006	2.0120-006
38	3.5052-005	3.6832-005	130	6.6222-006	3.9475-006
40	6.3339-005	4.3688-005	132	1.5673-006	1.3460-006
42	1.6333-005	3.4924-005	134	5.6601-006	4.1856-006
44	5.0777-005	3.4780-005	136	7.8376-006	3.2315-006
46	9.4801-006	3.5290-005	138	1.5340-005	3.2654-006
48	3.3530-005	2.5747-005	140	4.8246-006	6.7871-006
50	1.0724-005	3.6455-005	142	2.4864-005	7.6817-006
52	1.7940-005	1.8381-005	144	1.3497-005	2.4382-006
54	1.1561-005	3.2819-005	146	1.4203-005	2.8945-006
56	8.9865-006	1.4353-005	148	7.7190-006	6.1996-006
58	1.2213-005	2.7789-005	150	1.1519-005	1.1181-006
60	3.1342-006	1.0935-005	152	4.0604-006	1.8809-005
62	1.2516-005	2.2600-005	154	4.0649-007	1.0970-005
64	8.0212-007	8.9272-006	156	1.4477-006	1.7129-005
66	9.8458-006	1.6375-005	158	4.1973-006	3.8236-006
68	1.5683-006	8.3628-006	160	3.7777-006	1.4775-005
70	5.9844-006	1.1286-005	162	7.9877-006	2.2165-007
72	2.7599-006	7.7115-006	164	6.2754-006	1.7413-005
74	3.0530-006	8.1528-006	166	3.4463-007	1.0558-005
76	3.6358-006	5.6452-006	168	1.4803-006	3.9000-005
78	1.0142-006	5.6352-006	170	7.1613-006	9.7965-008
80	4.1176-006	5.6888-006	172	1.2334-005	2.0788-005
82	4.5432-008	3.9011-006	174	2.3746-006	1.3894-005
84	3.8232-006	5.0127-006	176	5.4455-006	9.3181-005
86	4.9[illegible]-007	2.1250-006	178	2.3184-005	3.3942-006
88	2.1[illegible]58-006	4.6732-006	180	2.9910-005	2.9910-005
90	1.8170-006	7.5114-007			

X = 46

Q = 2.269539

θ	I_1	I_2	θ	I_1	I_2
0	5.1762-002	5.1762-002	92	1.9563-006	7.6393-007
2	2.6245-002	2.6302-002	94	3.8544-006	6.2731-007
4	1.6295-003	1.6757-003	96	1.2823-006	1.2235-006
6	5.1883-004	5.0858-004	98	3.1745-006	2.1213-007
8	4.4447-004	4.0349-004	100	2.7468-007	1.7075-006
10	3.6350-004	3.4625-004	102	1.3754-006	3.1480-007
12	1.0887-004	1.2639-004	104	2.6550-007	1.6312-006
14	5.6380-004	5.4541-004	106	7.7177-007	3.6160-007
16	1.5071-004	1.7381-004	108	2.3616-006	8.3943-007
18	1.8658-004	2.0219-004	110	2.0557-006	1.6975-007
20	2.1527-004	1.9441-004	112	4.5727-006	4.0190-007
22	3.8570-005	5.9846-005	114	2.0812-006	2.3701-007
24	2.0913-004	1.7915-004	116	3.4401-006	1.3154-006
26	6.1970-005	6.9978-005	118	3.7863-007	4.1244-007
28	1.4236-004	1.3430-004	120	8.2141-007	2.2363-006
30	9.1017-005	9.0531-005	122	1.1334-006	4.6134-008
32	8.1572-005	9.4910-005	124	1.4438-006	1.2780-006
34	9.5175-005	9.1855-005	126	3.2088-006	5.4533-007
36	3.7008-005	6.1494-005	128	5.1592-006	6.4121-007
38	8.0017-005	7.6525-005	130	8.1286-007	1.4817-006
40	1.6396-005	4.3045-005	132	6.3624-006	3.5605-006
42	6.2545-005	5.8399-005	134	2.4672-006	2.8447-007
44	6.3936-006	2.9590-005	136	4.5861-006	4.0198-006
46	4.8417-005	4.3459-005	138	7.2087-006	2.2878-006
48	3.5606-006	2.2258-005	140	1.6920-005	1.3053-006
50	3.3212-005	2.9502-005	142	7.1559-006	1.7916-006
52	3.5949-006	1.7956-005	144	1.7225-005	2.5402-006
54	2.3005-005	2.0499-005	146	1.9731-005	8.6347-008
56	3.7930-006	1.3740-005	148	1.2306-005	3.0225-006
58	1.5994-005	1.4413-005	150	5.6969-006	3.1795-006
60	5.3840-006	1.1088-005	152	4.6528-006	3.7548-006
62	9.4746-006	9.4448-006	154	1.6134-006	7.9751-006
64	6.8808-006	9.0216-006	156	2.5853-006	1.0778-005
66	4.8694-006	6.4946-006	158	7.3676-006	2.8712-006
68	6.7799-006	6.4851-006	160	1.0671-005	8.4461-007
70	2.5716-006	5.1907-006	162	4.7109-006	1.4600-006
72	6.1814-006	4.1949-006	164	3.9966-006	5.5794-006
74	1.3387-005	4.3524-006	166	7.8796-007	3.8382-006
76	5.8538-006	2.5960-006	168	4.0509-006	1.2679-005
78	3.7204-007	3.6076-006	170	4.0406-006	1.3990-006
80	5.0158-006	1.5406-006	172	2.0387-005	2.5633-006
82	2.3889-008	3.0437-006	174	2.3631-006	6.2711-006
84	3.5524-006	9.1973-007	176	8.7203-006	3.9775-005
86	8.1080-007	2.4300-006	178	1.0642-006	1.8597-005
88	2.5401-006	6.6308-007	180	4.6594-006	4.6594-006
90	2.5656-006	1.5261-006			

X = 48

Q = 2 102044

θ	I_1	I_2	θ	I_1	I_2
0	5.2799-002	5.2799-002	92	1.3544-006	5.4738-007
2	2.2742-002	2.2947-002	94	2.2899-006	4.0884-006
4	1.9552-004	3.7587-004	96	1.0079-006	1.5639-006
6	2.0537-003	1.9500-003	98	2.8286-006	1.4048-006
8	4.0768-004	3.5463-004	100	6.8102-007	3.6684-006
10	7.4080-006	5.1305-006	102	2.4127-006	1.0131-007
12	3.9236-004	3.2471-004	104	8.7407-008	5.2583-006
14	2.9957-004	3.6826-004	106	9.8404-007	8.0173-008
16	2.3445-004	2.4427-004	108	4.7804-007	4.2443-006
18	3.4901-004	3.3753-004	110	5.8293-007	2.3213-007
20	8.9943-005	9.9391-005	112	3.1797-006	1.3719-006
22	2.1973-004	1.7429-004	114	2.0469-006	1.3267-006
24	5.9884-005	9.3079-005	116	5.7611-006	2.5872-008
26	1.3093-004	1.1246-004	118	2.4356-006	3.3828-006
28	7.4599-005	1.2787-004	120	4.0292-006	1.2869-007
30	9.2387-005	9.4438-005	122	6.7758-007	3.1387-006
32	8.0994-005	1.2786-004	124	7.1144-007	5.9402-008
34	6.5686-005	7.0502-005	126	3.8024-006	7.9837-007
36	7.5653-005	1.0395-004	128	5.7790-007	1.2303-006
38	4.8564-005	4.9718-005	130	1.2196-005	7.9538-007
40	6.1432-005	7.2413-005	132	1.7113-006	1.1282-006
42	3.4344-005	3.4224-005	134	1.2870-005	2.5451-006
44	5.1641-005	5.0798-005	136	6.9971-006	5.3973-007
46	2.1715-005	2.3875-005	138	1.7316-005	1.0211-006
48	4.1081-005	3.3996-005	140	9.1136-006	3 7997-006
50	1.4159-005	1.9878-005	142	3.7921-005	7.8562-007
52	3.2231-005	2.2808-005	144	1.1631-005	9.8208-007
54	7.8912-006	1.7027-005	146	2.4047-005	1.3875-006
56	2.7715-005	1.6986-005	148	1.3111-005	1.6020-007
58	3.4650-006	1.4134-005	150	1.2288-005	6.7224-006
60	2.3584-005	1.3392-005	152	2.4390-008	6.0961-006
62	1.7015-006	1.1838-005	154	2.5366-006	1.0070-005
64	1.8427-005	1.1276-005	156	2.9424-006	4.9570-006
66	1.1992-006	9.0461-006	158	6.8790-006	1.5427-005
68	1.4056-005	1.0523-005	160	1.5470-005	7.4276-008
70	9.0442-007	5.9528-006	162	8.8859-006	4.8622-006
72	1.1034-005	1.0095-005	164	1.6135-007	1.6704-005
74	5.0451-007	3.9705-006	166	6.8641-007	1.7253-005
76	8.5032-006	8.5019-006	168	8.8030-006	1.1888-005
78	7.7250-008	3.7257-006	170	2.1159-006	3.0859-006
80	5.9362-006	5.6212-006	172	7.3524-006	3.0495-005
82	7.0559-008	4.9600-006	174	1.1780-006	1.9857-006
84	3.6089-006	2.7803-006	176	1.0716-005	8.5317-005
86	5.3181-007	6.4038-006	178	2.5028-005	8.6655-006
88	2.1492-006	9.8912-007	180	2.5109-005	2.5109-005
90	1.3273-006	6.2580-006			

X = 50

Q = 1.979886

θ	I_1	I_2	θ	I_1	I_2
0	5.4756-002	5.4756-002	92	1.6046-006	5.7830-007
2	2.0843-002	2.0679-002	94	1.4508-007	2.3030-006
4	2.0678-004	1.4184-004	96	6.6273-007	1.6042-007
6	2.3670-003	2.3678-003	98	6.6261-007	1.6788-006
8	9.5814-005	1.3376-004	100	1.1744-006	1.8555-007
10	5.1878-004	4.8604-004	102	1.2819-006	4.7607-007
12	3.3631-004	2.8792-004	104	1.6698-006	9.6448-007
14	7.8187-005	9.3910-005	106	8.1672-007	5.1144-009
16	5.1877-004	4.8435-004	108	7.2292-007	2.2556-006
18	1.0963-004	1.5537-004	110	1.3808-007	3.3672-007
20	3.3598-004	3.2277-004	112	6.6267-008	2.3570-006
22	1.1790-004	1.3066-004	114	2.2909-006	2.8714-007
24	1.7503-004	1.6652-004	116	1.9443-006	8.3430-007
26	1.3581-004	1.1779-004	118	5.9570-006	5.0669-007
28	1.0662-004	1.0595-004	120	2.5360-006	5.2973-008
30	1.3190-004	1.0922-004	122	5.1800-006	2.5338-006
32	7.8854-005	8.7361-005	124	3.2073-007	5.0743-007
34	1.1164-004	9.8461-005	126	1.4364-006	3.8783-006
36	6.0422-005	7.5902-005	128	3.5228-006	3.0974-007
38	7.6603-005	7.6552-005	130	9.9991-007	2.2019-006
40	5.0238-005	6.5766-005	132	1.0852-005	3.5439-006
42	4.9596-005	5.8180-005	134	5.1539-006	6.9301-007
44	3.9182-005	5.1015-005	136	9.8013-006	8.2609-006
46	2.9825-005	4.3715-005	138	1.2376-005	2.1740-006
48	3.1049-005	3.8690-005	140	1.7621-005	4.0769-006
50	1.5829-005	3.1441-005	142	9.9804-006	2.6871-006
52	2.5670-005	2.8873-005	144	3.0904-005	1.8713-006
54	9.0161-006	2.3374-005	146	1.4196-005	2.7092-006
56	1.9080-005	2.0269-005	148	1.1313-005	4.2117-006
58	5.5289-006	1.7894-005	150	6.2453-006	4.5362-006
60	1.3300-005	1.4257-005	152	3.5757-006	9.8937-006
62	2.9771-006	1.2933-005	154	2.5472-006	1.4170-005
64	1.0340-005	1.0581-005	156	5.8266-006	3.2634-006
66	1.4234-006	8.8147-006	158	6.9802-006	3.8117-006
68	8.8633-006	7.8968-006	160	5.7459-006	4.6411-007
70	7.9082-007	6.1710-006	162	8.1492-006	4.1185-006
72	7.4505-006	5.6655-006	164	1.2910-006	1.1808-005
74	6.7251-007	4.5474-006	166	3.6049-006	1.5719-005
76	6.3271-006	3.9952-006	168	1.0422-005	4.1579-007
78	6.8645-007	3.2168-006	170	1.1309-005	9.1437-007
80	5.5416-006	2.8938-006	172	3.3072-007	2.2250-005
82	6.0406-007	2.1622-006	174	2.4127-007	6.1429-006
84	4.5337-006	2.0879-006	176	2.2663-005	1.4179-005
86	3.5024-007	1.7994-006	178	2.0505-005	1.8968-006
88	3.1847-006	1.2940-006	180	9.0717-006	9.0717-006
90	1.0500-007	2.0712-006			

X = 55

Q = 2.273920

θ	I_1	I_2	θ	I_1	I_2
0	1.0577-001	1.0577-001	92	4.1299-007	8.7657-007
2	3.9280-002	3.8670-002	94	4.1683-006	1.4843-006
4	1.1648-004	8.7777-005	96	1.9061-006	9.7981-007
6	5.3075-004	4.8294-004	98	3.6983-006	1.5810-007
8	1.0985-003	1.0634-003	100	2.6114-006	2.3979-006
10	1.6547-004	1.9672-004	102	1.3074-006	6.0893-007
12	8.4153-004	8.0554-004	104	8.3953-007	1.6696-006
14	1.4278-004	1.4332-004	106	6.2835-007	1.8178-006
16	3.2456-004	3.0702-004	108	1.6701-006	8.4329-008
18	2.4341-004	2.4057-004	110	2.5254-006	6.2659-007
20	2.5842-004	2.7837-004	112	3.7798-006	8.5257-007
22	2.3674-004	2.3757-004	114	2.5905-006	2.7111-007
24	2.1637-004	2.3120-004	116	1.0036-006	2.3897-006
26	1.5330-004	1.5125-004	118	7.3323-007	2.0876-006
28	1.8710-004	1.7441-004	120	1.5993-006	8.4153-007
30	8.1860-005	8.9818-005	122	2.0585-006	1.4188-006
32	1.7919-004	1.4361-004	124	9.0099-006	6.1310-007
34	3.7904-005	6.7152-005	126	1.5733-006	4.2468-009
36	1.5625-004	1.1976-004	128	8.2381-006	5.3890-006
38	2.3033-005	6.0048-005	130	9.2532-007	5.8607-007
40	1.0930-004	9.1521-005	132	2.7297-006	5.9321-006
42	3.4454-005	6.0071-005	134	1.3598-005	2.8734-006
44	5.0267-005	6.0127-005	136	2.4368-006	2.4609-006
46	4.6702-005	5.6121-005	138	2.4990-005	9.8374-006
48	1.4239-005	4.0652-005	140	1.3222-005	1.5750-006
50	4.3770-005	4.3520-005	142	2.0411-005	6.6046-006
52	4.0264-006	3.1028-005	144	2.7129-005	1.7423-006
54	2.9792-005	3.1048-005	146	2.2222-005	2.3526-006
56	5.2809-006	2.2449-005	148	1.0288-005	6.8542-006
58	1.6207-005	2.3587-005	150	9.1221-006	9.2940-006
60	9.6991-006	1.5152-005	152	4.2229-007	1.3893-005
62	6.7253-006	1.7065-005	154	5.8808-006	1.3480-005
64	1.2746-005	1.2599-005	156	6.6651-006	1.4727-006
66	1.4987-006	9.8368-006	158	1.1577-005	3.8876-006
68	1.2061-005	1.1639-005	160	9.1145-006	5.4245-006
70	2.3089-007	5.4901-006	162	3.4424-006	1.0294-005
72	8.9005-006	7.9865-006	164	5.5904-006	2.2662-005
74	1.4418-006	5.4623-006	166	1.0450-005	7.5542-007
76	5.2050-006	3.6073-006	168	9.4375-006	1.0902-006
78	4.2206-006	5.4675-006	170	1.2833-006	2.2226-005
80	1.9622-006	2.5865-006	172	1.0939-006	4.6518-006
82	6.3483-006	2.7052-006	174	9.7548-006	9.9140-006
84	3.3557-007	3.8882-006	176	7.8743-006	2.5489-005
86	5.0787-006	6.3360-007	178	2.4908-005	1.0462-005
88	1.1460-007	3.1590-006	180	2.3346-005	2.3346-005
90	3.5057-006	1.3343-006			

X = 60

Q = 1.997938

θ	I_1	I_2	θ	I_1	I_2
0	1.1532-001	1.1532-001	92	1.9451-006	2.4793-007
2	2.8303-002	2.7877-002	94	1.6788-006	1.7357-006
4	2.7702-003	2.7198-003	96	2.3655-007	2.6013-006
6	1.0449-003	1.0275-003	98	9.4377-007	1.1406-007
8	9.1088-004	8.7877-004	100	2.8961-007	1.7767-006
10	5.3245-004	5.0637-004	102	2.3656-006	9.1188-007
12	1.8402-004	2.1182-004	104	8.0941-007	9.2419-008
14	7.9248-004	7.4416-004	106	2.4054-006	2.9577-006
16	2.3932-004	2.5324-004	108	8.5158-007	1.5952-006
18	4.5479-004	4.2474-004	110	5.1340-007	2.0516-006
20	1.6725-004	1.9167-004	112	1.6509-007	1.3992-006
22	2.8890-004	2.8356-004	114	2.9761-006	1.6101-006
24	2.1069-004	2.3169-004	116	3.7585-006	4.3000-007
26	1.6814-004	1.7037-004	118	5.7868-006	2.4028-007
28	2.8641-004	2.5082-004	120	5.8203-006	8.6016-007
30	6.2085-005	9.6052-005	122	1.2677-006	2.0896-006
32	2.4384-004	1.8806-004	124	1.3997-006	3.4516-006
34	7.4570-005	1.0514-004	126	3.3485-006	1.8844-007
36	1.0498-004	1.0212-004	128	8.4286-007	7.8720-007
38	1.3083-004	1.2086-004	130	1.4187-005	3.2581-006
40	2.0080-005	6.5913-005	132	1.8629-006	3.4050-006
42	1.0371-004	8.9255-005	134	9.9333-006	4.3813-006
44	4.0210-005	6.8381-005	136	1.4556-005	6.8543-006
46	3.0172-005	5.5256-005	138	1.3792-005	5.0786-006
48	6.6496-005	5.7608-005	140	3.3607-005	1.8649-006
50	7.6984-006	4.1307-005	142	2.4504-005	1.0103-005
52	3.5333-005	4.2712-005	144	3.2883-005	3.2144-007
54	2.5569-005	3.0032-005	146	2.4375-005	3.7284-006
56	5.8347-006	2.9038-005	148	1.0117-005	7.5666-006
58	2.7333-005	2.8216-005	150	6.3974-006	1.4589-005
60	4.4432-006	1.4577-005	152	1.3214-006	1.5688-005
62	1.3237-005	2.1803-005	154	8.7443-006	7.8954-006
64	1.2447-005	1.4947-005	156	7.6580-006	5.0469-006
66	1.1396-006	9.1420-006	158	1.3867-005	1.7631-007
68	1.3417-005	1.2653-005	160	6.5060-006	1.2778-005
70	4.1752-006	9.3488-006	162	1.5824-006	2.3606-005
72	4.2017-006	5.0474-006	164	1.0444-005	8.5163-007
74	1.0622-005	6.8860-006	166	5.6213-006	1.8320-006
76	6.4492-008	6.1339-006	168	3.5343-006	1.4555-005
78	7.1621-006	2.7994-006	170	6.9786-007	1.0518-005
80	1.8012-006	3.3699-006	172	2.4692-006	5.6353-006
82	2.7918-006	4.8157-006	174	1.8453-005	5.4154-006
84	4.0223-006	1.1451-006	176	2.8115-007	3.3193-005
86	5.4134-007	1.9535-006	178	7.7605-006	3.6171-005
88	4.6635-005	2.0445-006	180	3.1039-006	3.1039-006
90	9.9089-007	1.6115-006			

X = 65

Q = 2.218942

θ	I_1	I_2	θ	I_1	I_2
0	1.9694-001	1.9694-001	92	3.4891-006	1.9515-007
2	4.5597-002	4.5682-002	94	7.1715-007	2.0960-006
4	1.1894-003	1.1864-003	96	4.9150-006	1.3351-006
6	1.0274-003	8.9608-004	98	4.2589-006	3.6482-007
8	5.3152-004	5.5065-004	100	2.5408-006	1.3239-007
10	1.3737-003	1.3418-003	102	4.8080-006	6.2974-007
12	1.7260-004	1.8636-004	104	1.1669-006	2.5982-006
14	6.1782-004	5.7363-004	106	1.2073-006	1.3323-006
16	1.9498-004	2.2532-004	108	1.5526-006	7.3758-007
18	7.1649-004	6.7448-004	110	2.0925-006	6.5160-007
20	1.5152-004	2.0912-004	112	5.0279-006	4.2758-007
22	4.1050-004	4.0045-004	114	2.0188-006	1.0649-006
24	2.2093-004	2.4715-004	116	3.9157-007	1.7904-006
26	1.3921-004	1.5927-004	118	3.4222-007	3.2402-006
28	3.3803-004	2.8603-004	120	4.8966-006	9.4297-007
30	7.4938-005	1.2053-004	122	5.9130-006	4.5753-008
32	1.9476-004	1.6819-004	124	5.8814-006	3.3043-007
34	2.2265-004	1.8885-004	126	9.5344-006	4.6086-006
36	3.9991-005	9.2958-005	128	9.5509-007	1.5642-006
38	1.4791-004	1.3127-004	130	1.7695-007	2.3049-006
40	1.2796-004	1.2093-004	132	1.1182-005	2.5469-006
42	2.0720-005	7.5490-005	134	1.6552-005	7.7114-006
44	8.6598-005	8.8212-005	136	8.5384-006	7.2039-007
46	7.3582-005	7.4904-005	138	2.3735-005	1.0682-005
48	1.0093-005	5.4649-005	140	3.8695-005	3.2146-006
50	4.5287-005	5.7567-005	142	1.8473-005	5.0382-006
52	4.3052-005	4.4695-005	144	5.1569-005	2.6833-007
54	4.6229-006	3.1907-005	146	1.9127-005	8.8113-006
56	2.9255-005	3.9272-005	148	1.0466-005	6.2118-006
58	2.2470-005	2.5963-005	150	4.8025-006	1.7734-005
60	2.3738-006	1.8500-005	152	6.8918-006	1.5032-005
62	1.7051-005	2.1903-005	154	8.3882-006	5.0252-006
64	1.5685-005	1.7956-005	156	1.2743-005	2.4601-006
66	3.0356-007	1.0342-005	158	1.7942-005	6.7018-006
68	1.4304-005	1.1634-005	160	5.1422-007	2.2369-005
70	9.7138-006	9.7502-006	162	6.6850-006	6.6221-006
72	3.0384-007	8.2608-006	164	8.9957-006	2.7520-006
74	9.1750-006	6.0271-006	166	8.7271-006	6.4727-006
76	5.2116-006	4.4870-006	168	6.9704-009	1.5327-005
78	4.3910-007	5.3719-006	170	5.1275-006	8.3594-006
80	7.9106-006	3.8759-006	172	2.3429-005	1.2961-006
82	4.0265-006	2.9080-006	174	4.2771-007	4.2178-005
84	1.3991-006	1.9876-006	176	1.3850-005	2.4531-006
86	7.2116-006	1.7599-006	178	5.5960-005	5.9173-006
88	1.9123-006	3.1743-006	180	1.8352-005	1.8352-005
90	1.9220-006	1.6210-006			

X = 70

Q = 2.021466

θ	I_1	I_2	θ	I_1	I_2
0	2.1827-001	2.1827-001	92	8.7589-007	1.1653-006
2	3.0697-002	3.0332-002	94	2.5190-006	4.6390-007
4	7.0073-003	6.8294-003	96	3.6284-006	1.2196-006
6	4.5704-004	5.3466-004	98	7.0278-007	3.5659-006
8	1.1382-003	1.0072-003	100	3.9242-007	1.8234-006
10	8.7456-005	1.2075-004	102	1.1560-006	7.2149-008
12	1.3104-003	1.2821-003	104	1.0277-006	8.0439-007
14	3.9316-004	4.4180-004	106	3.1645-006	3.8236-007
16	4.6964-004	4.2625-004	108	3.1176-006	1.7427-006
18	5.2245-004	4.7774-004	110	5.2292-007	2.8337-006
20	1.7424-004	2.3166-004	112	8.8162-007	1.1437-006
22	6.0150-004	5.6676-004	114	3.0313-006	1.3742-006
24	2.7807-004	3.1749-004	116	4.9281-006	9.4315-007
26	1.4160-004	1.8681-004	118	8.7743-006	9.3750-007
28	3.9121-004	3.2186-004	120	6.2927-006	3.1096-006
30	1.6638-004	1.8093-004	122	8.2793-007	1.6179-006
32	8.7404-005	1.2146-004	124	8.7963-007	1.5850-006
34	2.7129-004	2.0948-004	126	3.4996-006	1.5818-006
36	1.7313-004	1.6441-004	128	1.6421-005	2.7910-006
38	3.8852-005	1.0022-004	130	6.4034-006	5.6387-006
40	1.2433-004	1.2667-004	132	3.3450-006	1.6718-007
42	1.5353-004	1.3354-004	134	5.4552-006	7.5926-006
44	4.0578-005	8.2980-005	136	3.6003-005	5.5362-006
46	3.1819-005	7.5880-005	138	1.8563-005	1.1883-005
48	8.1339-005	7.9270-005	140	3.6876-005	9.2768-007
50	5.3176-005	6.1544-005	142	3.5021-005	6.6840-006
52	6.8776-006	4.4308-005	144	5.7382-005	1.5658-006
54	2.9985-005	4.9705-005	146	1.4139-005	1.3629-005
56	3.8128-005	3.9900-005	148	1.3991-005	6.6730-006
58	1.1572-005	2.6905-005	150	1.1242-006	2.2347-005
60	5.7127-006	2.4080-005	152	1.3698-005	1.1865-005
62	2.5882-005	2.7105-005	154	1.0910-005	7.8910-006
64	1.4886-005	1.8237-005	156	1.9817-005	8.5601-007
66	5.5434-007	1.3213-005	158	8.7653-006	1.6937-005
68	1.0266-005	1.3605-005	160	4.3288-006	1.6892-005
70	1.5159-005	1.1358-005	162	1.1861-005	6.1730-006
72	3.2623-006	8.3414-006	164	9.2076-006	3.5972-006
74	2.7824-006	6.4916-006	166	3.0316-006	1.5278-005
76	1.3987-005	6.5714-006	168	4.9134-006	1.5108-005
78	7.4408-006	5.6497-006	170	2.8695-005	1.3009-007
80	5.0704-007	[illegible]03-006	172	2.9468-007	4.1250-005
82	6.7730-006	2.[illegible]196-006	174	1.7165-005	7.9854-006
84	4.7312-006	1.8500-006	176	6.9899-006	6.0614-006
86	4.8571-008	4.1869-006	178	1.8236-005	5.5174-005
88	3.1675-006	3.0892-006	180	1.3487-005	1.3487-005
90	3.5133-006	9.0988-007			

X = 75

Q = 2.179300

θ	I_1	I_2	θ	I_1	I_2
0	3.3687-001	3.3687-001	92	3.5837-006	1.1125-006
2	4.1686-002	4.1395-002	94	4.9924-006	2.7728-008
4	4.5139-003	4.3457-003	96	1.7869-006	1.4462-006
6	2.2082-003	2.0894-003	98	2.1285-006	2.1736-006
8	1.0561-003	1.1164-003	100	6.6407-006	1.0439-006
10	7.0286-004	6.3514-004	102	6.7397-006	1.4651-006
12	7.0352-004	6.9228-004	104	3.1569-006	2.6960-006
14	3.3716-004	3.6961-004	106	1.4698-006	1.7020-006
16	1.0542-003	1.0122-003	108	1.0694-006	6.5326-007
18	3.6038-004	3.9278-004	110	2.3184-006	6.6519-007
20	2.6874-004	2.9017-004	112	3.7176-006	1.5006-007
22	6.3597-004	5.8359-004	114	2.6145-006	1.4979-006
24	2.7061-004	3.2325-004	116	4.4501-007	4.4459-006
26	1.5119-004	2.2120-004	118	1.1937-006	3.7588-006
28	4.2906-004	3.7672-004	120	8.2338-006	6.2705-007
30	3.2656-004	2.9868-004	122	1.3973-005	3.9843-007
32	8.0129-005	1.4295-004	124	6.7663-006	1.3556-006
34	1.3840-004	1.5144-004	126	1.3090-007	1.7292-006
36	2.7637-004	2.1080-004	128	3.8334-008	4.1773-006
38	1.9285-004	1.7285-004	130	8.8943-006	2.3572-006
40	4.9101-005	1.0652-004	132	2.5594-005	8.3332-006
42	6.1130-005	1.0577-004	134	6.4756-006	7.9436-006
44	1.2787-004	1.2049-004	136	1.9255-005	2.2907-006
46	1.0933-004	1.0592-004	138	1.7212-005	7.3084-006
48	3.4649-005	7.3798-005	140	6.7646-005	6.6319-006
50	1.5416-005	6.5027-005	142	3.6217-005	1.3208-005
52	4.6871-005	6.5880-005	144	4.9685-005	2.7872-006
54	5.2485-005	5.3443-005	146	1.8250-005	1.3387-005
56	2.2561-005	3.7334-005	148	1.8324-005	8.4771-006
58	2.6000-006	2.9936-005	150	5.7544-007	2.5566-005
60	1.9123-005	3.5307-005	152	1.7125-005	8.6568-006
62	2.8556-005	3.0539-005	154	1.9379-005	8.4475-006
64	1.5682-005	2.0527-005	156	2.0968-005	1.1232-005
66	1.1265-006	1.3238-005	158	6.3120-007	2.7252-005
68	7.2480-006	1.2136-005	160	6.6577-006	4.3121-006
70	2.0722-005	1.3875-005	162	1.4533-005	1.4266-006
72	1.3681-005	1.1501-005	164	1.4820-005	6.8930-006
74	8.5490-007	5.4465-006	166	4.1567-006	3.6071-005
76	3.2186-006	7.4894-006	168	2.9121-005	1.6954-006
78	1.0198-005	3.8344-006	170	1.2537-006	3.4646-005
80	8.3829-006	2.8223-006	172	7.9603-006	9.9909-006
82	9.6004-007	4.0834-006	174	4.4615-006	3.8455-006
84	2.1053-006	4.1655-006	176	3.0835-006	5.1954-006
86	8.1716-006	3.1652-006	178	3.5072-005	5.7280-005
88	6.5032-006	2.9162-006	180	1.2996-005	1.2996-005
90	1.8563-006	2.7867-006			

X = 80

Q = 2.047273

θ	I_1	I_2	θ	I_1	I_2
0	3.8178-001	3.8178-001	92	3.5183-006	1.5884-007
2	2.6561-002	2.6375-002	94	1.8775-006	4.2086-007
4	6.7927-003	6.7592-003	96	1.4711-006	5.3072-007
6	3.2527-003	3.0554-003	98	2.6738-006	3.7971-008
8	4.1560-004	4.1503-004	100	1.7044-006	6.9326-007
10	1.9552-003	1.9104-003	102	1.1645-007	2.4019-006
12	3.1309-004	3.6210-004	104	2.0409-006	2.3709-006
14	7.6609-004	7.4143-004	106	4.7343-006	7.3002-007
16	8.0540-004	7.9560-004	108	3.4131-006	6.5535-007
18	2.6450-004	3.1814-004	110	7.5372-007	2.7818-006
20	5.8837-004	5.7626-004	112	2.1845-006	3.8794-006
22	7.2042-004	6.6502-004	114	4.8031-006	2.1435-006
24	2.7623-004	3.2005-004	116	4.6485-006	2.8163-007
26	1.3294-004	2.0878-004	118	5.1322-006	1.0607-006
28	3.8912-004	3.6547-004	120	4.0459-006	3.6844-006
30	4.5134-004	3.8869-004	122	1.3756-006	3.8116-006
32	2.4611-004	2.5820-004	124	8.7583-006	7.3203-007
34	7.9430-005	1.4614-004	126	1.7853-005	9.6515-007
36	1.3250-004	1.5559-004	128	7.1237-006	2.3470-006
38	2.3896-004	1.9580-004	130	1.1018-007	7.1346-007
40	2.3466-004	1.9122-004	132	1.9950-007	4.3930-006
42	1.2129-004	1.4115-004	134	1.7197-005	2.5407-006
44	3.3839-005	1.0470-004	136	4.4587-005	1.5467-005
46	2.4420-005	9.1864-005	138	3.6120-005	1.4294-005
48	6.9812-005	9.7927-005	140	7.1077-005	6.2219-006
50	8.6502-005	8.5663-005	142	3.6343-005	9.2452-006
52	6.7504-005	6.7275-005	144	6.4528-005	1.6779-006
54	2.7381-005	4.6341-005	146	1.8158-005	1.1651-005
56	8.9303-006	3.9371-005	148	1.1007-005	1.3411-005
58	2.1446-005	4.2799-005	150	7.7564-006	2.6169-005
60	3.5718-005	4.0969-005	152	1.4450-005	7.8850-006
62	3.8373-005	3.5708-005	154	2.8201-005	2.2577-006
64	2.1696-005	2.4699-005	156	1.1462-005	2.4659-005
66	2.7934-006	1.5569-005	158	2.4894-006	2.1320-005
68	1.8707-006	1.3187-005	160	8.2840-006	1.1805-005
70	1.0034-005	1.1032-005	162	2.4963-005	3.7310-006
72	1.5145-005	8.7385-006	164	9.9515-007	3.8731-005
74	1.1730-005	7.8342-006	166	2.3498-005	2.7596-006
76	2.5431-006	7.0461-006	168	4.9863-006	1.2382-005
78	1.5805-006	6.8308-006	170	1.3741-006	7.9589-006
80	8.8358-006	6.3299-006	172	3.1674-006	1.0834-006
82	1.1647-005	4.6688-006	174	5.1238-006	1.7909-006
84	5.8226-006	3.9214-006	176	9.4913-007	2.6745-005
86	7.9960-007	4.5650-006	178	5.6462-005	2.9081-005
88	1.1040-006	3.9518-006	180	5.7062-005	5.7062-005
90	3.5307-006	1.6339-006			

X = 85

Q = 2.133560

θ	I_1	I_2	θ	I_1	I_2
0	5.3285-001	5.3285-001	92	3.7365-006	1.7574-006
2	2.6932-002	2.7373-002	94	2.4274-006	1.7685-006
4	5.4300-003	5.1407-003	96	3.5008-006	1.0148-006
6	1.0152-003	1.0607-003	98	5.0693-006	2.8673-007
8	3.1708-003	3.0417-003	100	5.1271-006	3.7951-008
10	2.6719-004	2.7371-004	102	4.8550-006	1.5937-007
12	1.0337-003	1.0028-003	104	4.3432-006	4.6017-007
14	1.5372-003	1.4995-003	106	3.1665-006	1.0945-006
16	4.2231-004	4.7239-004	108	2.0043-006	1.6672-006
18	3.3208-004	3.6157-004	110	1.7535-006	1.0343-006
20	8.6585-004	8.1624-004	112	2.3092-006	3.5891-006
22	7.9536-004	7.6012-004	114	1.8268-006	1.1418-006
24	3.2256-004	3.9015-004	116	2.2001-007	3.7447-006
26	1.3156-004	2.3051-004	118	1.8952-006	3.6555-006
28	3.0602-004	3.2124-004	120	3.8541-006	7.9453-007
30	4.6739-004	3.9390-004	122	1.3314-005	1.2395-006
32	4.3805-004	3.6375-004	124	7.8962-006	5.6585-006
34	2.5097-004	2.5222-004	126	3.1749-006	5.5081-006
36	1.0630-004	1.7446-004	128	1.5466-005	1.1511-006
38	6.1377-005	1.4226-004	130	2.5009-005	5.9945-006
40	1.1025-004	1.5695-004	132	8.1459-006	9.1227-006
42	1.5989-004	1.6313-004	134	1.6715-005	1.5501-006
44	1.8255-004	1.6152-004	136	1.8864-005	9.2886-006
46	1.4573-004	1.3188-004	138	2.3372-005	3.8562-006
48	9.0142-005	1.0103-004	140	6.6443-005	5.1495-006
50	4.2278-005	7.6889-005	142	5.3281-005	6.6476-006
52	1.2755-005	6.0409-005	144	8.6416-005	1.0806-006
54	1.5346-005	5.9317-005	146	1.9221-005	1.5595-005
56	2.7569-005	5.6557-005	148	6.6996-006	2.4044-005
58	4.1359-005	5.2406-005	150	1.6732-005	2.2258-005
60	4.7840-005	4.6913-005	152	1.7422-005	1.0080-005
62	3.4870-005	3.5190-005	154	3.5286-005	1.7030-006
64	1.6481-005	2.5341-005	156	1.4042-006	3.1149-005
66	4.9922-006	2.0236-005	158	4.2439-006	1.1813-005
68	2.1939-007	1.5861-005	160	1.8791-005	3.6075-006
70	5.1336-006	1.3472-005	162	1.3578-005	2.0157-005
72	1.5398-005	1.2745-005	164	6.8773-006	2.0532-005
74	1.9752-005	1.0419-005	166	1.1387-005	1.2750-006
76	1.5623-005	7.4793-006	168	3.7182-006	8.9998-006
78	7.8128-006	6.4441-006	170	1.2075-006	1.7433-005
80	2.0596-006	6.5205-006	172	2.3188-005	2.5342-007
82	2.8045-007	5.6847-006	174	1.2265-006	4.1340-005
84	2.7523-006	3.9178-006	176	4.3615-005	6.3179-006
86	6.8381-006	2.2652-006	178	2.2236-005	1.1252-004
88	8.5588-006	1.3098-006	180	8.6302-005	8.6302-006
90	7.0412-006	1.2914-006			

X = 90

Q = 2.066814

θ	I_1	I_2	θ	I_1	I_2
0	6.2300-001	6.2300-001	92	1.7289-006	2.9205-006
2	1.7396-002	1.7051-002	94	3.1983-006	1.5715-006
4	1.9630-003	1.9834-003	96	4.8061-006	6.4474-007
6	3.1891-003	2.9632-003	98	4.8143-006	1.2671-006
8	3.2813-004	3.4907-004	100	2.8004-006	3.2326-006
10	1.1028-003	1.1102-003	102	4.9539-007	4.5893-006
12	1.5564-003	1.4330-003	104	7.2897-007	3.7652-006
14	6.3800-004	6.7758-004	106	4.2818-006	1.4856-006
16	3.9187-004	4.8667-004	108	7.4600-006	6.1881-007
18	8.1030-004	7.8451-004	110	5.1951-006	2.9477-006
20	9.7163-004	8.5507-004	112	1.3540-006	5.7728-006
22	6.9270-004	6.3724-004	114	2.9452-006	4.5215-006
24	3.3240-004	4.0973-004	116	8.0670-006	1.1051-006
26	1.6931-004	3.0267-004	118	7.0338-006	1.6988-006
28	2.4767-004	3.2549-004	120	1.2976-006	5.7053-006
30	3.8548-004	3.5952-004	122	2.3671-006	5.3908-006
32	4.7722-004	3.8099-004	124	1.0296-005	9.5563-007
34	4.4565-004	3.4628-004	126	1.1199-005	1.4647-006
36	3.6379-004	3.0288-004	128	4.4904-006	6.0208-006
38	2.3858-004	2.3659-004	130	9.2495-007	5.6232-006
40	1.4452-004	1.9201-004	132	1.2474-005	1.4437-006
42	7.5376-005	1.5144-004	134	3.6649-005	9.3095-006
44	3.9864-005	1.2811-004	136	2.9328-005	1.7534-005
46	3.3325-005	1.1724-004	138	6.7121-005	6.8270-006
48	3.5895-005	1.0493-004	140	9.9005-005	1.5117-005
50	5.1042-005	1.0239-004	142	6.2851-005	1.3059-005
52	6.0016-005	9.4804-005	144	8.1224-005	4.1655-006
54	6.2771-005	8.2841-005	146	1.2546-005	2.2373-005
56	6.5575-005	7.4958-005	148	2.0143-006	3.9641-005
58	5.6993-005	6.2953-005	150	2.4723-005	1.5983-005
60	4.1262-005	4.8435-005	152	2.6979-005	1.0777-005
62	2.9670-005	3.8704-005	154	3.0798-005	1.7527-005
64	1.8942-005	3.0498-005	156	1.6954-006	2.9932-005
66	7.3133-006	2.2138-005	158	1.0980-005	1.9923-005
68	8.5261-007	1.7007-005	160	3.7526-005	3.0013-006
70	4.0850-007	1.4485-005	162	5.8676-007	4.6361-005
72	2.8630-006	1.1719-005	164	1.9793-005	7.6000-006
74	6.7564-006	8.6095-006	166	1.4738-005	8.2629-006
76	1.1793-005	6.2559-006	168	1.1847-007	3.9575-005
78	1.5387-005	4.6885-006	170	4.0019-005	5.1958-006
80	1.4330-005	3.3952-006	172	3.2615-006	4.8701-005
82	9.6900-006	2.3604-006	174	4.2103-005	1.9638-005
84	5.4388-006	2.0023-006	176	1.1262-005	5.1111-005
86	2.5216-006	2.4904-006	178	6.8762-005	7.5659-005
88	1.3646-006	3.3587-006	180	1.7738-005	1.7788-005
90	9.9207-007	3.6301-006			

X = 95

Q = 2.096168

θ	I_1	I_3	θ	I_1	I_3
0	8.0184-001	8.0184-001	92	1.0407-005	1.2495-006
2	9.8551-003	9.7360-003	94	1.0644-005	1.8104-006
4	3.2205-003	3.0379-003	96	8.2938-006	3.0740-006
6	7.5309-004	8.0276-004	98	3.6554-006	4.2144-006
8	7.5506-004	7.4258-004	100	1.6946-006	3.9402-006
10	2.0658-003	1.9172-003	102	4.3120-006	1.8214-006
12	1.2354-003	1.2816-003	104	7.6764-006	9.1233-008
14	2.9010-004	3.5703-004	106	5.9947-006	6.1283-007
16	8.3799-004	8.0628-004	108	1.6565-006	1.7897-006
18	1.3486-003	1.2868-003	110	1.4604-006	9.6949-007
20	1.1136-003	1.0750-003	112	4.7356-006	1.5394-007
22	6.1296-004	6.2893-004	114	3.2877-006	3.0552-006
24	2.9699-004	3.8236-004	116	1.7102-008	6.6414-006
26	1.7332-004	3.0075-004	118	5.6308-006	4.4197-006
28	1.9089-004	3.1117-004	120	1.4027-005	5.3797-007
30	2.4527-004	3.1411-004	122	8.8820-006	2.4156-006
32	3.1630-004	3.2385-004	124	5.4646-007	4.5977-006
34	3.5056-004	3.0877-004	126	7.3796-006	1.3728-006
36	3.7693-004	3.0497-004	128	1.1396-005	8.8313-007
38	3.5281-004	2.7835-004	130	1.3784-006	2.7015-006
40	3.2371-004	2.5753-004	132	9.9394-006	9.2498-008
42	2.8076-004	2.3112-004	134	2.3465-005	7.2978-006
44	2.2523-004	1.9536-004	136	1.3286-005	1.2621-005
46	1.9019-004	1.7119-004	138	5.2241-005	3.8287-006
48	1.5286-004	1.4285-004	140	6.9181-005	1.1506-005
50	1.1458-004	1.1490-004	142	5.0558-005	1.3755-005
52	9.2237-005	9.7919-005	144	7.2786-005	8.7486-006
54	7.3517-005	8.1373-005	146	9.5252-006	2.4605-005
56	5.3554-005	6.3836-005	148	2.5465-006	5.0660-005
58	4.0935-005	5.2839-005	150	2.5734-005	1.2349-005
60	3.3284-005	4.5473-005	152	4.1451-005	6.9189-006
62	2.4083-005	3.6758-005	154	1.6276-005	3.1769-005
64	1.5137-005	2.8960-005	156	5.5093-006	2.0620-005
66	9.5943-006	2.4658-005	158	3.2058-005	1.4584-005
68	6.7740-006	2.1997-005	160	2.8262-005	1.6303-005
70	4.5888-006	1.8584-005	162	5.8539-006	1.6578-005
72	2.1012-006	1.4920-005	164	1.5170-005	1.8745-006
74	2.7186-007	1.2576-005	166	1.1181-005	2.0434-005
76	1.9137-007	1.1139-005	168	2.1144-005	1.2543-005
78	1.0857-006	9.1100-006	170	1.2778-005	3.5062-005
80	2.5934-006	6.3941-006	172	2.1831-005	2.2632-005
82	4.5525-006	3.9553-006	174	1.2211-005	3.5080-005
84	6.5753-006	2.2591-006	176	2.2448-005	5.3165-005
86	8.2529-006	1.4272-006	178	5.1963-005	8.0745-005
88	8.6180-006	1.2512-006	180	3.8616-005	3.8616-005
90	8.9093-006	1.2105-006			

X = 100

Q = 2.101090

θ	I_1	I_2	θ	I_1	I_2
0	9.8164-001	9.8164-001	92	8.9802-007	4.0552-006
2	8.2190-003	7.5955-003	94	3.6740-006	5.3964-006
4	1.0978-003	1.0549-003	96	6.7632-006	4.6398-006
6	1.0017-003	8.2367-004	98	5.3698-006	1.9737-006
8	3.7256-003	3.6161-003	100	3.0933-006	3.0831-007
10	1.2771-003	1.1958-003	102	4.4653-006	1.3973-006
12	2.9794-004	3.6335-004	104	7.3320-006	3.3362-006
14	1.1543-003	1.3678-003	106	5.8482-006	2.5633-006
16	1.5392-003	1.4873-003	108	4.3931-006	3.9595-007
18	1.2163-003	1.1850-00[illegible]	110	6.3106-006	1.2477-006
20	8.0689-004	9.2158-00[illegible]	112	5.0515-006	3.8633-006
22	5.6029-004	6.3579-004	114	3.4533-007	2.5620-006
24	4.2558-004	4.4198-004	116	2.1306-006	1.3374-007
26	2.6432-004	3.2877-004	118	3.2013-006	3.1898-006
28	1.6734-004	2.9780-004	120	2.3174-007	6.1805-006
30	1.4176-004	2.7000-004	122	1.7663-005	1.9423-006
32	1.7191-004	2.5715-004	124	4.1756-005	6.5352-007
34	1.7403-004	2.2713-004	126	2.9247-005	6.1357-006
36	1.5519-004	2.1519-004	128	1.6049-005	4.7451-006
38	1.0414-004	1.9679-004	130	3.3068-005	1.7323-006
40	6.1445-005	1.8095-004	132	2.9097-005	1.1954-005
42	4.0960-005	1.7390-004	134	8.2438-006	1.8495-005
44	2.9335-005	1.5537-004	136	2.0076-005	8.3930-006
46	2.5676-005	1.3789-004	138	6.4237-005	7.6533-006
48	3.0095-005	1.2448-004	140	7.2177-005	1.4320-005
50	3.0675-005	1.0303-004	142	8.5301-005	7.6656-006
52	2.5297-005	8.0933-005	144	1.1565-004	6.9708-006
54	2.0031-005	6.6778-005	146	2.6299-005	2.0179-005
56	1.3230-005	5.6216-005	148	1.7424-006	5.1920-005
58	1.1707-005	4.6259-005	150	3.9334-005	1.1113-005
60	1.8766-005	3.9312-005	152	5.2901-005	1.3564-006
62	2.9565-005	3.6568-005	154	1.1131-006	3.8384-005
64	3.8214-005	3.4984-005	156	2.0050-005	1.9926-005
66	3.6094-005	3.0589-005	158	7.2891-005	4.4018-007
68	2.4320-005	2.3580-005	160	9.1073-007	3.8509-005
70	1.5775-005	1.7087-005	162	1.0063-005	1.5630-005
72	1.7149-005	1.2582-005	164	1.5946-005	2.4954-006
74	2.3772-005	9.9934-006	166	2.9820-005	5.6038-005
76	2.6760-005	9.1436-006	168	4.0634-006	4.1928-007
78	2.0820-005	8.9910-006	170	1.8046-005	1.9234-005
80	1.0281-005	8.0838-006	172	1.0557-005	2.0712-006
82	4.9795-006	6.3158-006	174	5.8442-006	3.2400-005
84	8.1003-006	4.2780-006	176	9.4585-006	2.4777-005
86	1.1375-005	2.4230-006	178	7.5283-005	1.1524-004
88	8.5892-006	1.5669-006	180	1.9920-004	1.9920-004
90	3.2072-006	2.3017-006			

X = 105

Q = 2.061438

θ	I_1	I_2	θ	I_1	I_2
0	[illegible]567+000	1.1567+000	92	5.2069-006	4.1377-006
2	2.5247-004	3.9216-004	94	8.0860-006	3.1899-006
4	2.2667-003	1.9928-003	96	9.1621-006	8.3961-007
[illegible]	6.0792-003	5.9624-003	98	6.6771-006	4.7637-007
[illegible]	4.7866-004	4.5262-004	100	4.0631-006	2.5658-006
10	1.0355-003	1.1273-003	102	5.5109-006	3.0421-006
12	1.8703-003	1.7650-003	104	9.7994-006	9.3831-007
14	1.8576-003	1.6870-003	106	8.8826-006	3.4722-007
16	1.6855-003	1.6580-003	108	3.2243-006	2.4253-006
18	1.0599-003	1.1134-003	110	1.7178-006	2.2900-006
20	5.9937-004	6.6771-004	112	5.9261-006	2.5494-007
22	4.2726-004	5.0790-004	114	4.8459-006	2.7335-006
24	3.7346-004	4.7787-004	116	8.9208-007	6.4161-006
26	2.8814-004	4.2039-004	118	8.0902-006	2.8591-006
28	2.2351-004	3.6983-004	120	1.6457-005	2.5196-007
30	1.7884-004	3.2017-004	122	7.8661-006	5.2489-006
32	1.8734-004	3.0963-004	124	6.1195-006	5.3176-006
34	2.0649-004	2.9465-004	126	2.1900-005	6.1774-007
36	2.5003-004	2.9800-004	128	1.7352-005	3.8037-006
38	2.9817-004	2.9876-004	130	1.6264-006	5.0196-006
40	3.1072-004	2.7940-004	132	4.8377-006	3.5283-006
42	3.1019-004	2.6375-004	134	4.4125-006	8.5803-006
44	2.8212-004	2.3932-004	136	3.5469-005	6.1503-006
46	2.1970-004	2.0454-004	138	1.0638-004	1.2818-005
48	1.6270-004	1.7860-004	140	1.0507-004	2.5731-005
50	1.1743-004	1.5781-004	142	1.0358-004	1.3829-005
52	7.4651-005	1.2854-004	144	1.1205-004	7.0651-006
54	4.1[illegible]-005	9.4336-005	146	1.6314-005	1.7403-005
56	2.0[illegible]-005	6.6886-005	148	5.5575-006	4.6317-005
58	8.4506-006	5.0449-005	150	2.5819-005	1.0787-005
60	4.6741-006	4.2753-005	152	5.6121-005	4.6207-006
62	1.0645-005	3.8790-005	154	3.8259-007	3.4514-005
64	1.8491-005	3.4372-005	156	1.6827-005	2.8969-005
66	2.3171-005	2.8795-005	158	5.3843-005	8.1326-006
68	2.7318-005	2.3375-005	160	5.0804-007	2.6957-005
70	3.2104-005	1.9589-005	162	1.3141-005	1.2564-005
72	3.4451-005	1.7449-005	164	1.5449-005	3.0558-005
74	3.1708-005	1.4703-005	166	3.1438-005	1.6544-005
76	2.4343-005	1.0410-005	168	1.1827-005	2.4082-005
78	1.5819-005	6.9011-006	170	2.6142-006	2.2916-005
80	1.0598-005	5.7984-006	172	1.4337-005	5.7585-007
82	9.2885-006	5.9159-006	174	1.0932-005	2.0147-005
84	9.1777-006	5.1191-006	176	1.8043-005	4.5446-005
86	8.2974-006	2.9310-006	178	6.4125-005	8.3774-005
88	6.5244-006	1.5978-006	180	3.1615-005	3.1615-005
90	4.7886-006	2.7351-006			

X = 110

Q = 2.099617

θ	I_1	I_2	θ	I_1	I_2
0	1.4347+000	1.4347+000	92	9.8781-006	1.8093-006
2	3.8077-003	3.0840-003	94	8.4595-006	8.3980-007
4	8.9787-003	9.1018-003	96	4.0838-006	1.2546-007
6	9.1306-005	8.2114-005	98	3.3172-006	1.9498-006
8	2.8255-003	2.8753-003	100	6.0218-006	2.0051-006
10	2.4138-003	2.1727-003	102	5.7547-006	1.1607-007
12	2.5238-003	2.4567-003	104	2.1371-006	2.0562-006
14	1.5768-003	1.5526-003	106	3.0078-006	4.2443-006
16	7.2772-004	7.8193-004	108	1.0068-005	1.4977-006
18	5.8716-004	7.1280-004	110	1.0321-005	8.2480-007
20	4.9262-004	5.9810-004	112	3.2313-006	4.6084-006
22	3.7119-004	4.6396-004	114	4.2124-006	3.2822-006
24	3.4081-004	4.4840-004	116	9.3598-006	6.0787-007
26	3.5131-004	4.7515-004	118	2.5782-006	4.9051-006
28	3.8352-004	5.0396-004	120	4.4323-006	4.9358-006
30	4.1557-004	5.0846-004	122	2.6014-005	9.7587-008
32	4.9652-004	5.2302-004	124	2.3774-005	4.8533-006
34	5.5409-004	4.8797-004	126	1.4592-006	7.3477-006
36	5.7223-004	4.3591-004	128	1.0999-005	1.2575-006
38	5.0559-004	3.7551-004	130	2.1761-005	6.1384-006
40	3.3399-004	3.0022-004	132	1.4058-005	1.4547-005
42	1.7171-004	2.4260-004	134	3.3800-005	9.2199-006
44	7.8735-005	2.0191-004	136	6.9456-005	8.0380-006
46	6.0128-005	1.6809-004	138	8.4905-005	1.3672-005
48	8.4052-005	1.4909-004	140	7.0742-005	1.5625-005
50	1.1154-004	1.4526-004	142	8.6661-005	1.8891-005
52	1.2665-004	1.4242-004	144	9.4470-005	1.7410-005
54	1.1622-004	1.2791-004	146	1.4324-005	2.0914-005
56	7.8349-005	1.0135-004	148	1.3897-005	3.8157-005
58	3.4989-005	7.0167-005	150	2.8400-005	9.6264-006
60	7.9790-006	4.4599-005	152	4.7257-005	2.1286-005
62	2.1546-006	3.3116-005	154	3.8721-006	2.8085-005
64	1.3520-005	3.3857-005	156	4.4555-005	2.1368-005
66	3.2737-005	3.4761-005	158	2.4376-005	2.8071-005
68	4.6433-005	2.8605-005	160	1.6386-005	2.7407-005
70	4.5228-005	2.0958-005	162	5.1942-005	1.1145-006
72	3.0538-005	1.7483-005	164	1.1413-006	5.9765-005
74	1.3809-005	1.5606-005	166	2.2026-005	1.4802-006
76	4.2873-006	1.2565-005	168	1.7574-006	2.2907-005
78	2.1943-006	1.0076-005	170	3.1350-005	1.4104-005
80	1.6605-006	8.3774-006	172	9.0599-006	6.5391-005
82	4.7755-006	7.0324-006	174	3.4659-005	3.8092-006
84	7.5157-006	6.4535-006	176	1.6019-005	4.4460-005
86	7.5678-006	4.9038-006	178	5.0343-005	1.0180-004
88	6.7606-006	1.7493-006	180	4.3376-005	4.3376-005
90	7.8408-006	8.3966-007			

X = 115

Q = 2.039604

θ	I_1	I_2	θ	I_1	I_2
0	1.6269+000	1.6269+000	92	6.3149-006	5.8856-006
2	7.8266-003	8.0370-003	94	6.0703-006	2.2456-006
4	2.9206-003	2.8089-003	96	9.6933-006	1.0777-007
6	7.0553-003	6.9779-003	98	1.5742-005	1.3276-006
8	2.5520-003	2.4537-003	100	1.2040-005	9.1997-007
10	2.4345-003	2.4053-003	102	5.6544-006	1.2860-006
12	6.4165-004	7.1526-004	104	8.9724-006	1.7795-006
14	5.7467-004	7.1076-004	106	1.1607-005	1.2001-007
16	5.3588-004	6.7700-004	108	4.6606-006	2.4914-006
18	4.2514-004	5.3696-004	110	1.8543-007	5.3911-006
20	4.6478-004	5.9338-004	112	5.1793-006	1.1612-006
22	4.2058-004	5.6963-004	114	4.4885-006	1.7766-006
24	3.4931-004	4.8908-004	116	9.0481-007	8.0715-006
26	4.0087-004	5.1935-004	118	1.3218-005	3.5742-006
28	5.6816-004	6.3432-004	120	1.8418-005	9.5617-007
30	7.3024-004	7.1437-004	122	4.6659-006	9.0511-006
32	8.0263-004	7.0102-004	124	1.0983-005	4.5499-006
34	6.5301-004	5.4492-004	126	2.1256-005	8.2121-007
36	3.8758-004	3.7073-004	128	8.6488-006	9.7406-006
38	1.6323-004	2.6670-004	130	1.0579-005	5.7618-006
40	1.1804-004	2.4245-004	132	1.0026-005	8.1818-008
42	2.2385-004	2.5932-004	134	1.6011-005	2.7025-007
44	3.0645-004	2.6826-004	136	8.2417-005	1.0852-005
46	2.6644-004	2.5139-004	138	1.2747-004	3.3991-005
48	1.3939-004	2.0768-004	140	1.1125-004	2.3123-005
50	4.2611-005	1.4687-004	142	1.1914-004	1.0958-005
52	3.1451-005	1.0344-004	144	9.0172-005	2.2145-005
54	7.1867-005	1.0038-004	146	7.3428-006	3.0499-005
56	1.0131-004	1.1204-004	148	3.3274-005	4.2016-005
58	8.2601-005	9.6631-005	150	3.9725-005	1.0015-005
60	3.4179-005	6.2032-005	152	3.0784-005	4.6431-005
62	3.7291-006	4.2078-005	154	4.9752-006	3.0849-005
64	1.3647-005	4.1357-005	156	7.5053-005	2.8702-006
66	4.3115-005	3.9084-005	158	1.3587-006	3.7690-005
68	5.2651-005	2.8605-005	160	1.3079-005	4.1727-005
70	3.2504-005	2.1774-005	162	5.2684-005	1.3974-005
72	9.1237-006	1.9852-005	164	1.2271-005	1.9042-005
74	3.1219-007	1.4196-005	166	2.2571-005	9.2564-006
76	2.7538-006	9.2972-006	168	8.5030-007	4.1551-005
78	1.1957-005	9.7955-006	170	3.4514-005	1.9063-005
80	1.9539-005	7.1823-006	172	3.5561-005	4.7440-005
82	1.6735-005	2.6677-006	174	1.6059-005	2.9662-005
84	9.2672-006	4.6454-006	176	1.5341-005	9.2295-007
86	4.3146-006	6.0525-006	178	2.2193-005	1.0897-004
88	3.2059-006	2.6975-006	180	8.8011-006	8.8011-006
90	4.4579-006	3.6914-006			

X = 120

Q = 2.142070

θ	I_1	I_2	θ	I_1	I_2
0	2.1151+000	2.1151+000	92	1.3256-006	5.1376-006
2	1.0091-002	8.3442-003	94	8.1905-007	1.6255-006
4	1.6954-002	1.8143-002	96	1.2172-005	4.1003-006
6	1.1729-003	9.6973-004	98	1.5381-005	4.6137-006
8	1.0648-003	1.0869-003	100	1.4032-006	5.2528-007
10	6.9850-004	5.0178-004	102	6.0632-006	4.1180-007
12	1.1387-003	1.3903-003	104	5.3545-006	9.3702-007
14	1.2811-003	1.0642-003	106	2.9100-006	3.7239-006
16	1.4512-003	1.3322-003	108	1.3588-006	2.5971-006
18	1.0850-003	1.1025-003	110	2.7411-005	2.5153-007
20	9.4078-004	7.2719-004	112	2.4114-005	6.1093-006
22	6.0648-004	6.1008-004	114	3.1409-006	4.6632-006
24	3.0644-004	5.5831-004	116	2.8873-005	2.1591-007
26	4.0943-004	6.5695-004	118	4.6336-006	6.7231-006
28	8.6707-004	8.1090-004	120	2.7434-005	5.4830-006
30	1.1245-003	8.4836-004	122	5.8559-005	3.9375-007
32	7.8901-004	6.8377-004	124	6.1910-006	6.3086-006
34	2.6486-004	4.0777-004	126	4.1215-006	4.0729-006
36	8.0237-005	2.9190-004	128	3.6949-005	8.1223-007
38	3.6871-004	3.5387-004	130	2.8728-006	3.0238-006
40	6.1209-004	4.0023-004	132	5.5136-005	1.0647-006
42	3.6536-004	3.3254-004	134	6.0957-005	1.3561-005
44	1.4397-004	2.4103-004	136	7.7750-005	1.7825-005
46	1.1626-004	1.9602-004	138	6.8328-005	2.1959-005
48	1.4086-004	1.3809-004	140	5.1628-005	3.1928-005
50	1.7276-004	2.0941-004	142	1.1601-004	1.3308-005
52	9.0545-005	1.6478-004	144	1.7768-004	1.9613-005
54	2.2911-006	9.6254-005	146	2.4773-005	3.2319-005
56	5.0377-005	8.9486-005	148	7.2193-005	3.5272-005
58	9.7234-005	1.0266-004	150	1.2989-004	6.5950-006
60	5.2149-005	7.2048-005	152	2.2693-005	5.7955-005
62	1.8273-005	4.2696-005	154	3.5053-005	3.9062-005
64	7.8300-006	4.2270-005	156	1.4153-004	4.7075-006
66	4.8303-005	3.7745-005	158	4.5729-006	3.0239-005
68	9.9772-005	2.9955-005	160	1.3676-004	1.7299-005
70	3.3445-005	2.6016-005	162	9.0480-006	5.6612-005
72	2.9197-006	1.7082-005	164	6.0887-005	1.4846-005
74	2.3303-005	1.4683-005	166	4.0566-005	2.2390-005
76	2.5271-005	1.3472-005	168	6.2549-005	2.5004-005
78	3.8821-005	7.1757-006	170	1.3616-005	4.5371-005
80	1.1798-005	9.2852-006	172	1.0928-005	6.1891-006
82	7.1366-006	8.4811-006	174	7.6067-005	5.0690-005
84	1.4695-005	3.8976-006	176	2.1164-005	3.3101-006
86	1.4385-005	4.5129-006	178	9.8339-005	7.7102-005
88	2.4690-005	1.1407-006	180	5.9297-004	5.9297-004
90	7.5842-006	2.2007-006			

X = 125

Q = 2.023818

θ	I_1	I_2	θ	I_1	I_2
0	2.2333+000	2.2333+000	92	1.7631-005	1.9423-006
2	3.4936-002	3.4533-002	94	9.7991-006	6.0840-007
4	2.0556-003	1.9596-003	96	6.1242-006	5.7521-006
6	1.5247-003	1.5779-003	98	7.7637-006	1.5576-006
8	3.2170-003	3.2372-003	100	1.0926-005	2.4000-006
10	3.4532-003	3.3600-003	102	8.5993-006	3.2913-006
12	2.9737-003	2.7483-003	104	8.5190-006	1.5517-006
14	3.1125-003	2.9457-003	106	1.1932-005	5.7015-007
16	2.1486-003	1.9719-003	108	4.8750-006	2.2058-006
18	1.9259-003	1.8547-003	110	4.7272-008	7.1160-006
20	1.2696-003	1.2934-003	112	3.8085-006	1.1061-006
22	6.2226-004	7.1697-004	114	5.1864-006	3.3772-006
24	3.9607-004	5.3813-004	116	2.0378-006	8.8527-006
26	6.8837-004	7.8279-004	118	1.6238-005	1.2171-006
28	1.0782-003	1.0420-003	120	1.7800-005	4.5244-006
30	9.4018-004	8.9350-004	122	9.4016-007	9.5621-006
32	4.2390-004	5.1357-004	124	3.4497-005	2.6088-007
34	1.7017-004	3.5896-004	126	2.9042-005	7.5603-006
36	4.9087-004	.7411-004	128	1.9629-006	4.5824-006
38	6.6097-004	.3993-004	130	4.7823-005	2.8093-006
40	2.8177-004	3.4515-004	132	2.8326-005	1.3131-005
42	1.3320-004	2.7277-004	134	2.1111-005	6.8024-006
44	3.3577-004	2.9857-004	136	8.2549-005	3.3083-005
46	2.6819-004	2.9070-004	138	9.6676-005	3.5695-005
48	7.3015-005	2.0505-004	140	1.0234-004	1.7057-005
50	7.6882-005	1.5154-004	142	1.4580-004	2.1707-005
52	1.6201-004	1.8376-004	144	1.1685-004	2.2873-005
54	1.0875-004	1.5155-004	146	8.1915-006	2.8850-005
56	1.3669-005	8.4494-005	148	7.0838-005	2.4170-005
58	7.4599-005	9.6291-005	150	9.6850-005	2.5794-006
60	1.0815-004	9.0344-005	152	2.3659-006	5.4430-005
62	2.4095-005	5.4235-005	154	2.9463-005	4.6660-005
64	1.3728-005	4.6519-005	156	4.9529-005	2.1540-005
66	6.5099-005	4.3311-005	158	1.2620-007	4.0676-005
68	5.0062-005	3.6142-005	160	8.2671-005	1.9343-007
70	2.7723-006	2.5166-005	162	2.9079-007	3.4529-005
72	1.5469-005	2.1386-005	164	3.6175-005	7.2853-006
74	3.5069-005	1.7766-005	166	9.9743-006	7.1088-005
76	2.1050-005	1.3280-005	168	3.1818-005	8.9114-006
78	3.6212-006	1.3307-005	170	7.0762-006	3.7159-005
80	6.6534-006	7.7362-006	172	6.3312-006	4.7115-006
82	1.9017-005	6.4355-006	174	2.4527-005	3.9010-005
84	1.1907-005	2.9957-006	176	1.9024-005	3.5755-005
86	2.8222-006	6.9728-006	178	4.4823-005	3.7864-005
88	3.2314-006	5.8401-006	180	4.9372-005	4.9372-005
90	1.2997-005	1.7770-006			

Appendix C

GRAPHS OF ANGULAR SCATTERING FUNCTIONS

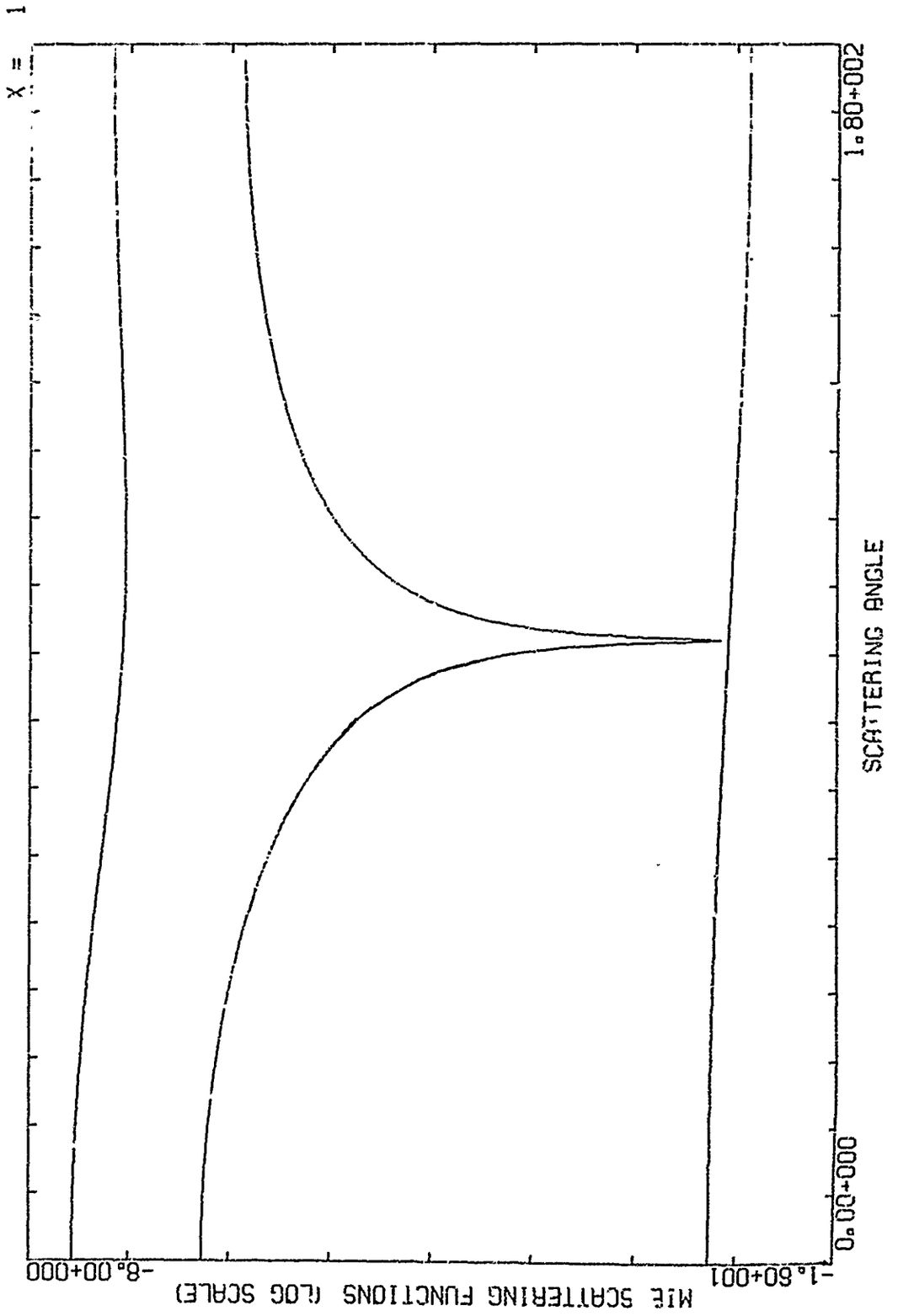
The following pages comprise graphs of the scattering functions

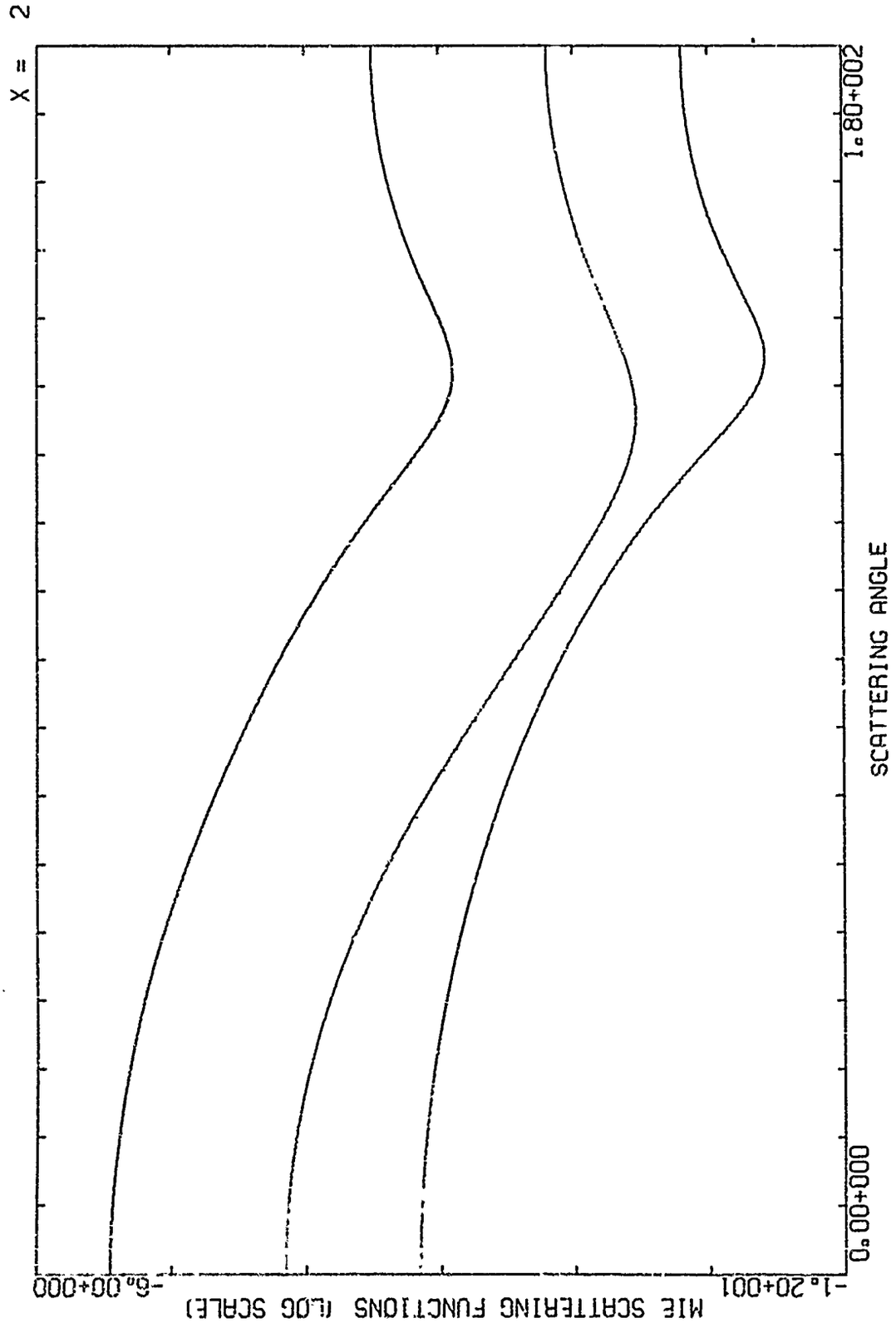
$I_1(\theta) \times 10^{-N}$, (lowest curve)

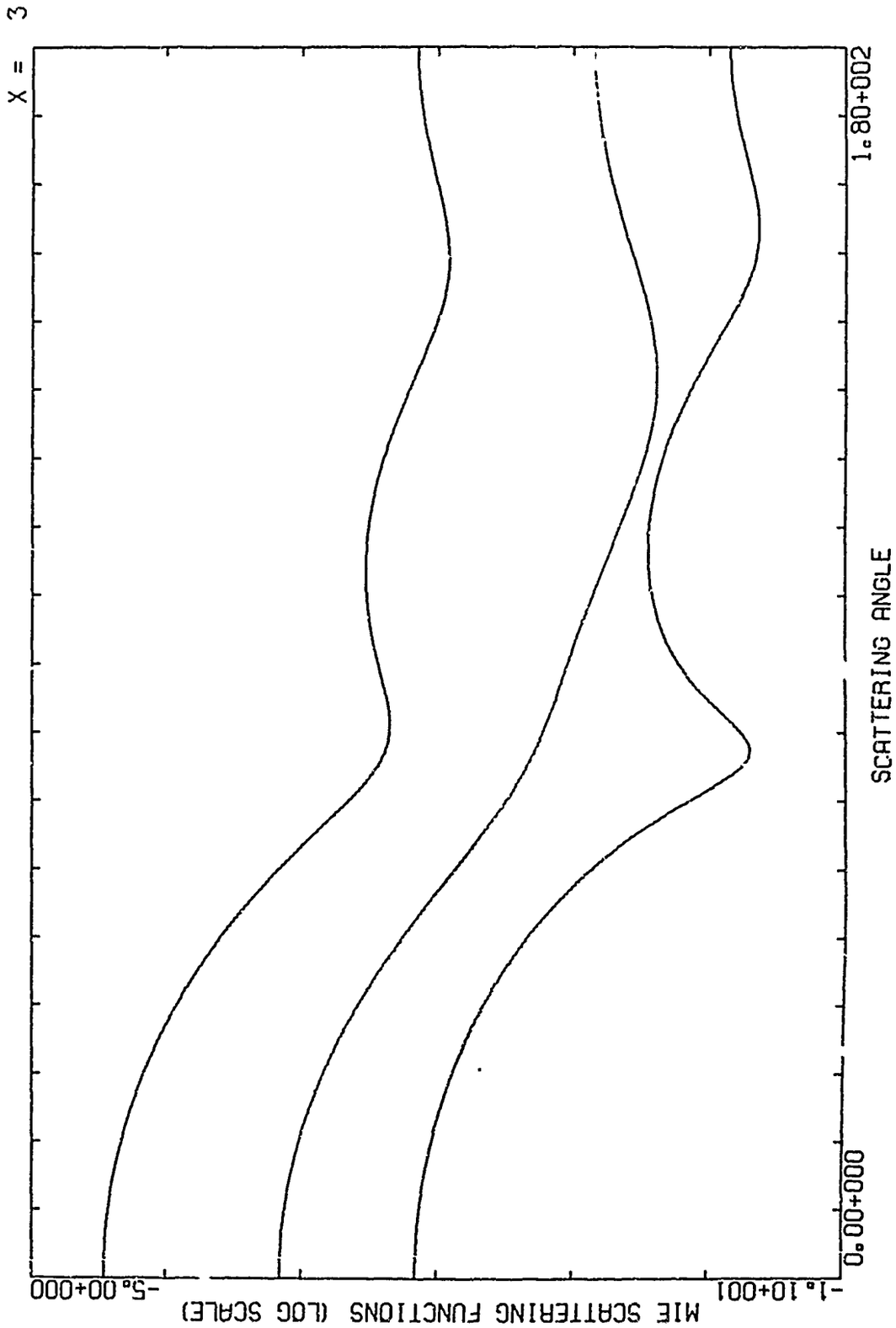
$I_2(\theta) \times 10^{-1}$, (middle curve)

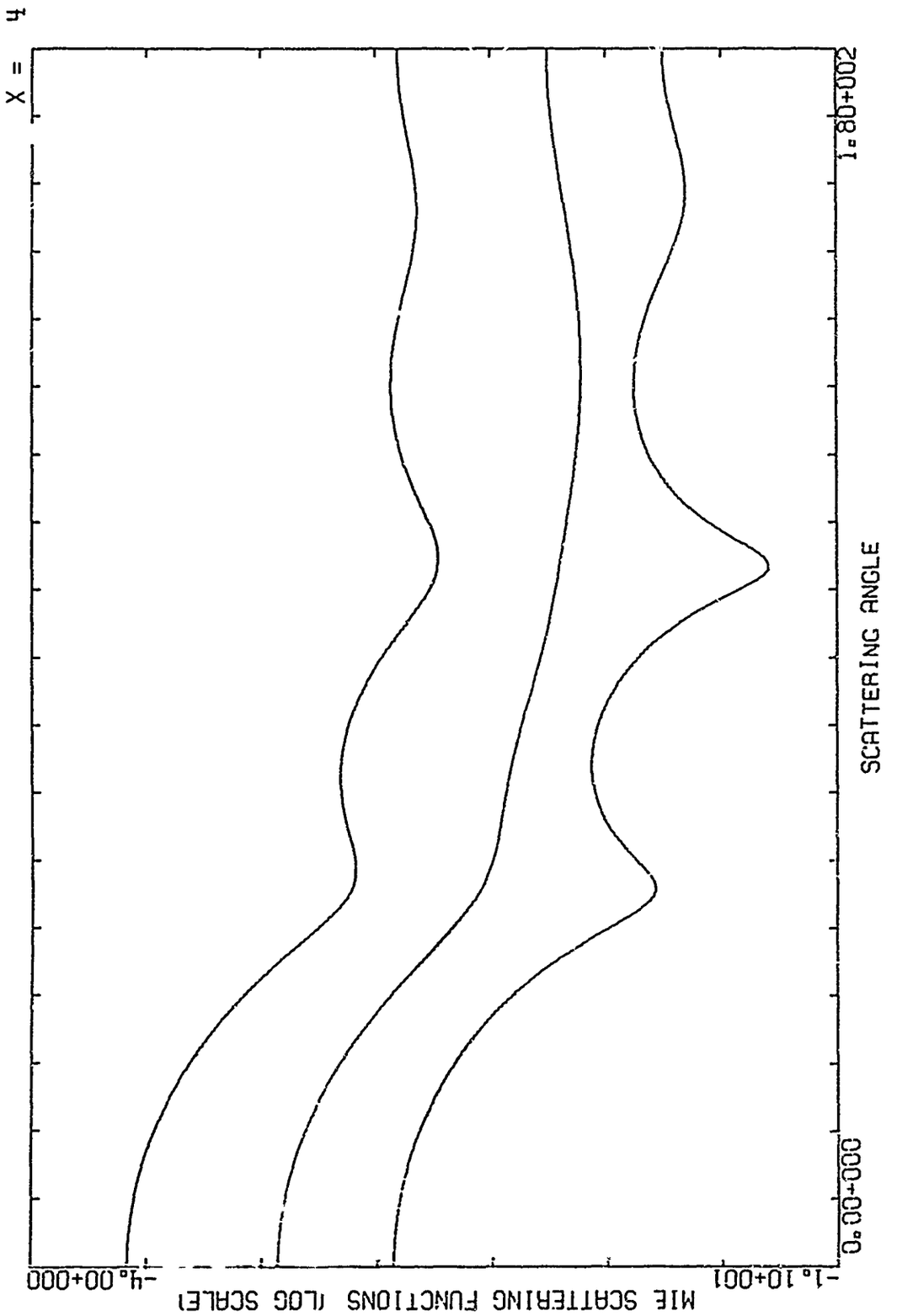
$I_1(\theta) + I_2(\theta)$, (top curve)

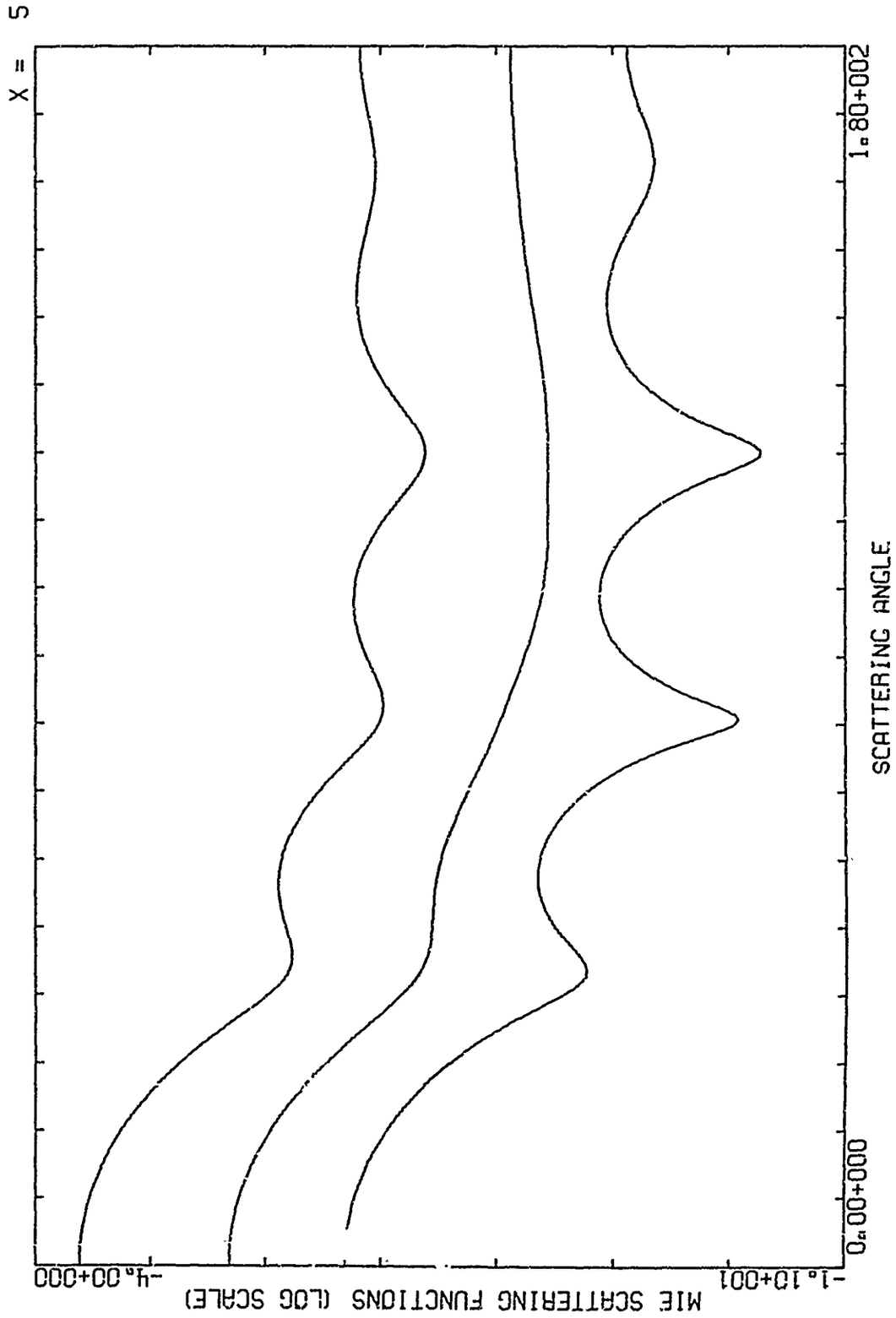
In the text, p. 8 gives the method of determining the 10^{-N} factor.

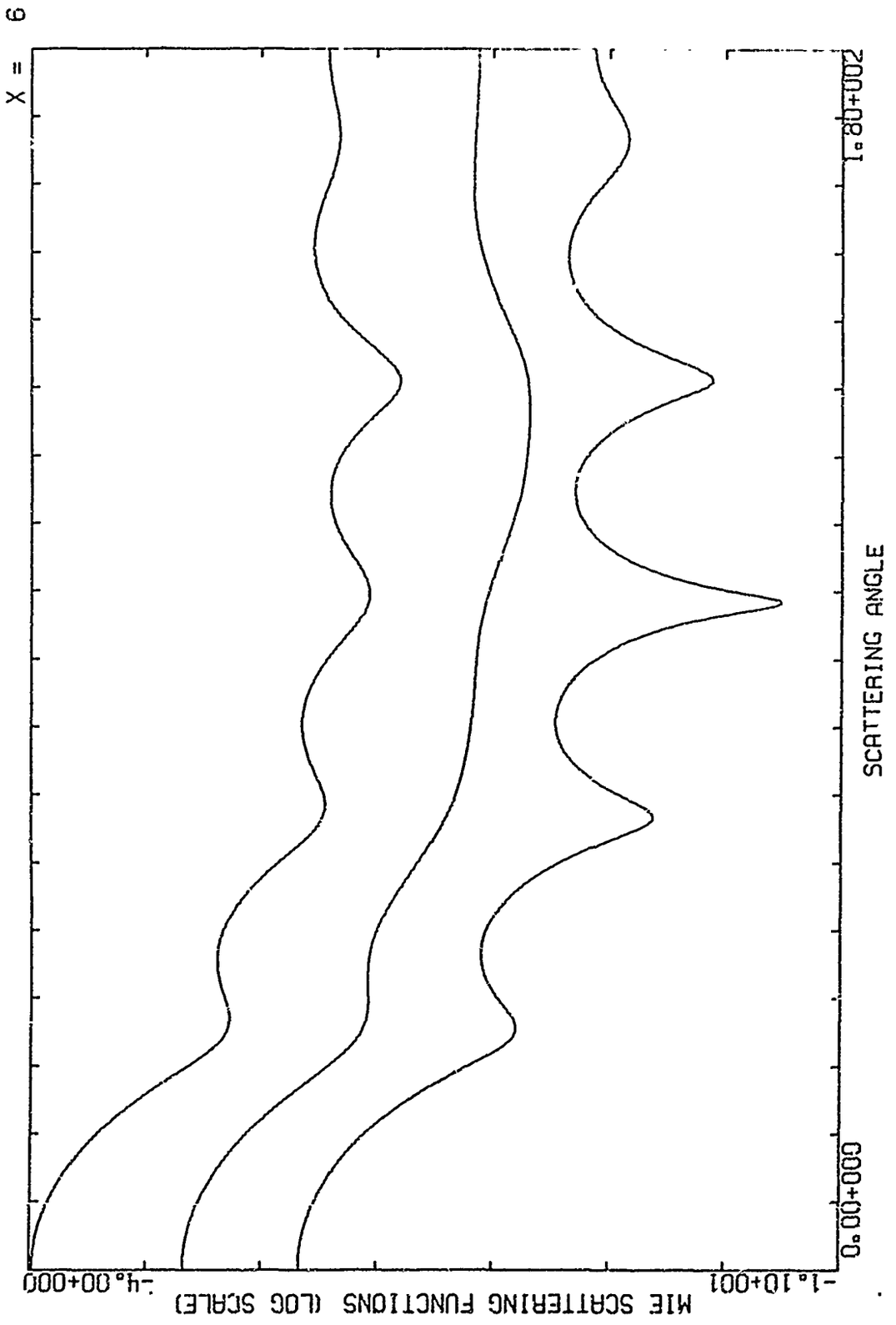

X = 1
0.00+000
1.80+002
SCATTERING ANGLE
-8.00+000
-1.60+001
MIE SCATTERING FUNCTIONS (LOG SCALE)

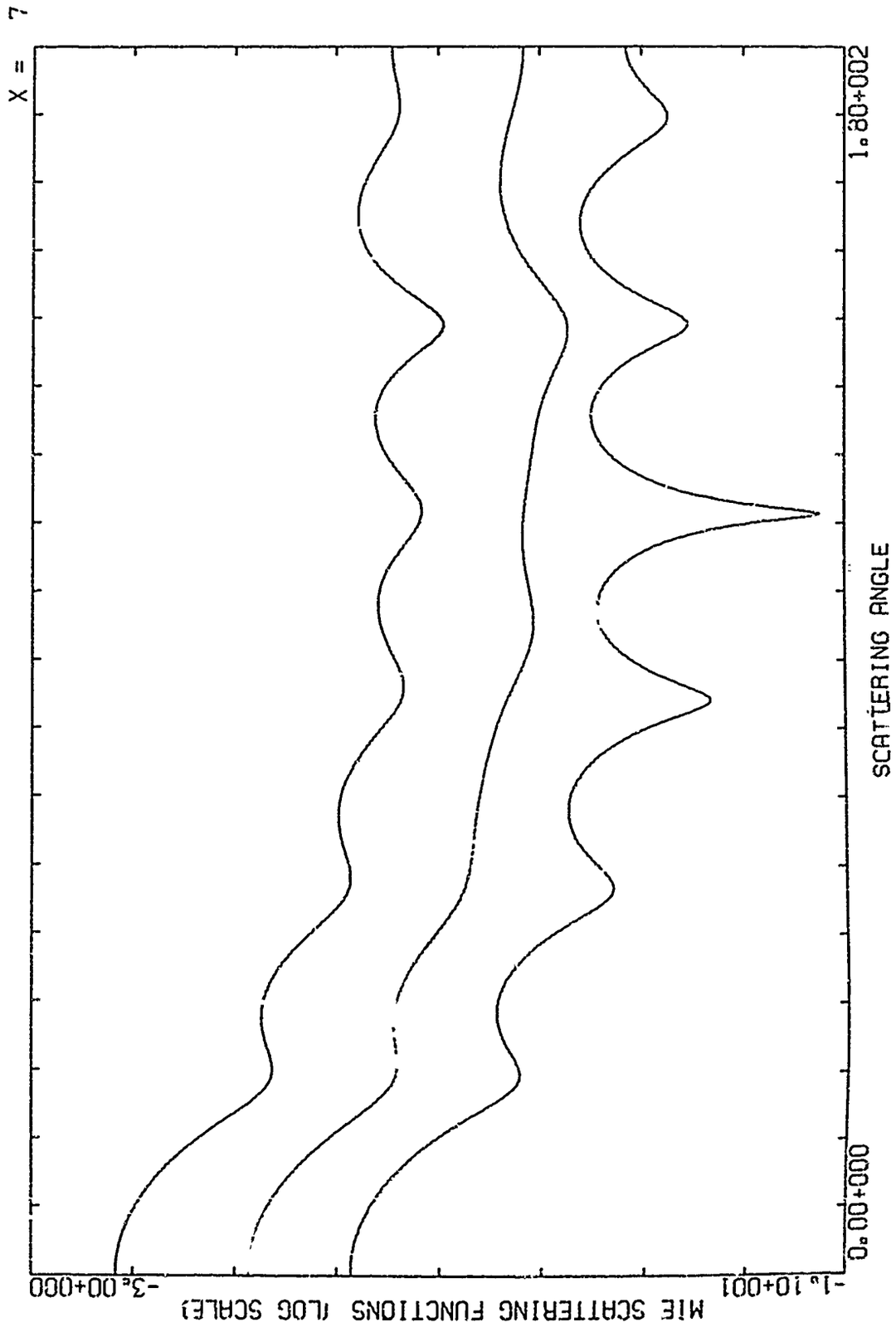

X = 2
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
-6.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

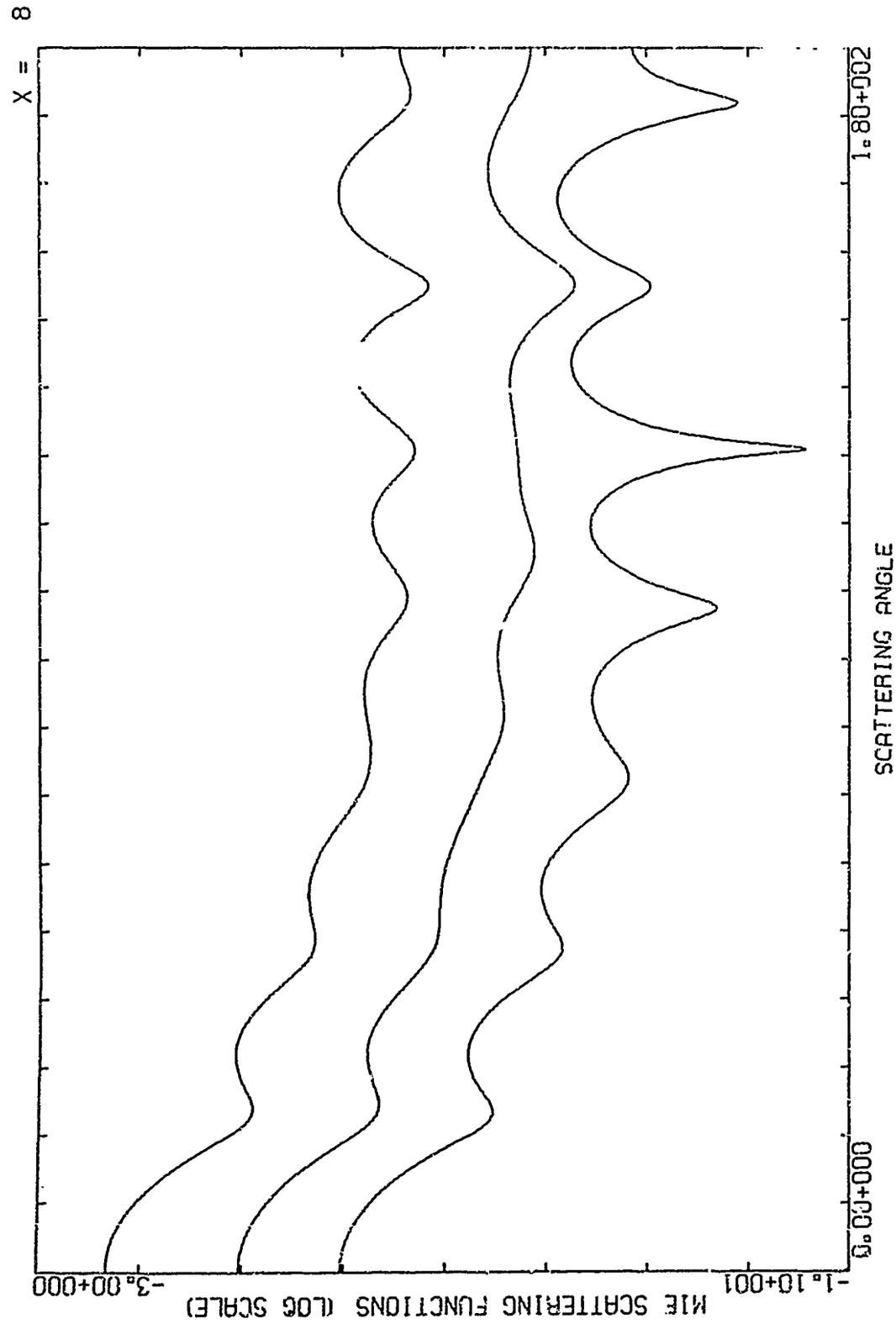

X = 3
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.10+001
-5.00+000
0.00+000
1.80+002
SCATTERING ANGLE

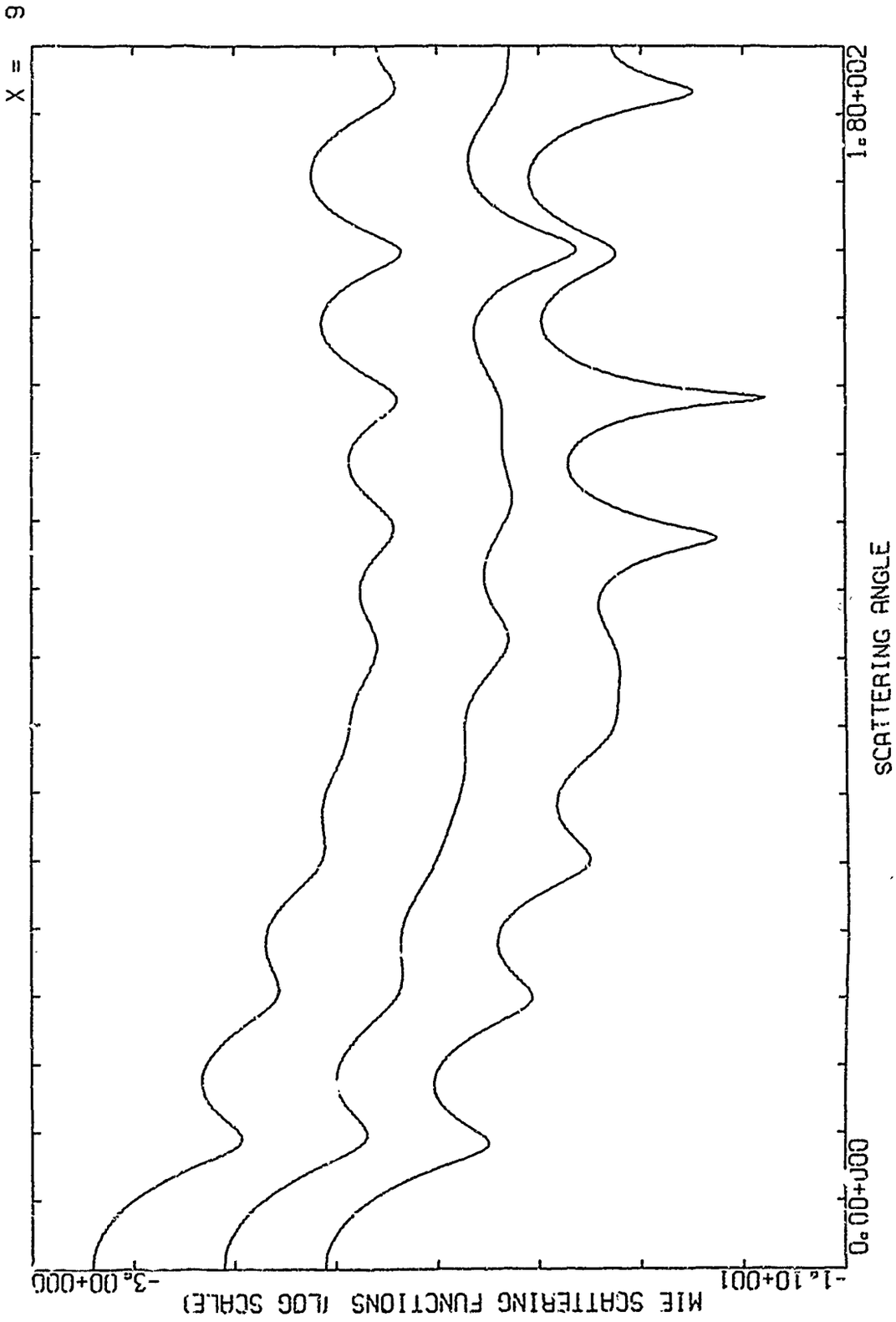

X = 4
-4.00+000
-1.10+001
MIE SCATTERING FUNCTIONS (LOG SCALE)
0.00+000
1.80+002
SCATTERING ANGLE

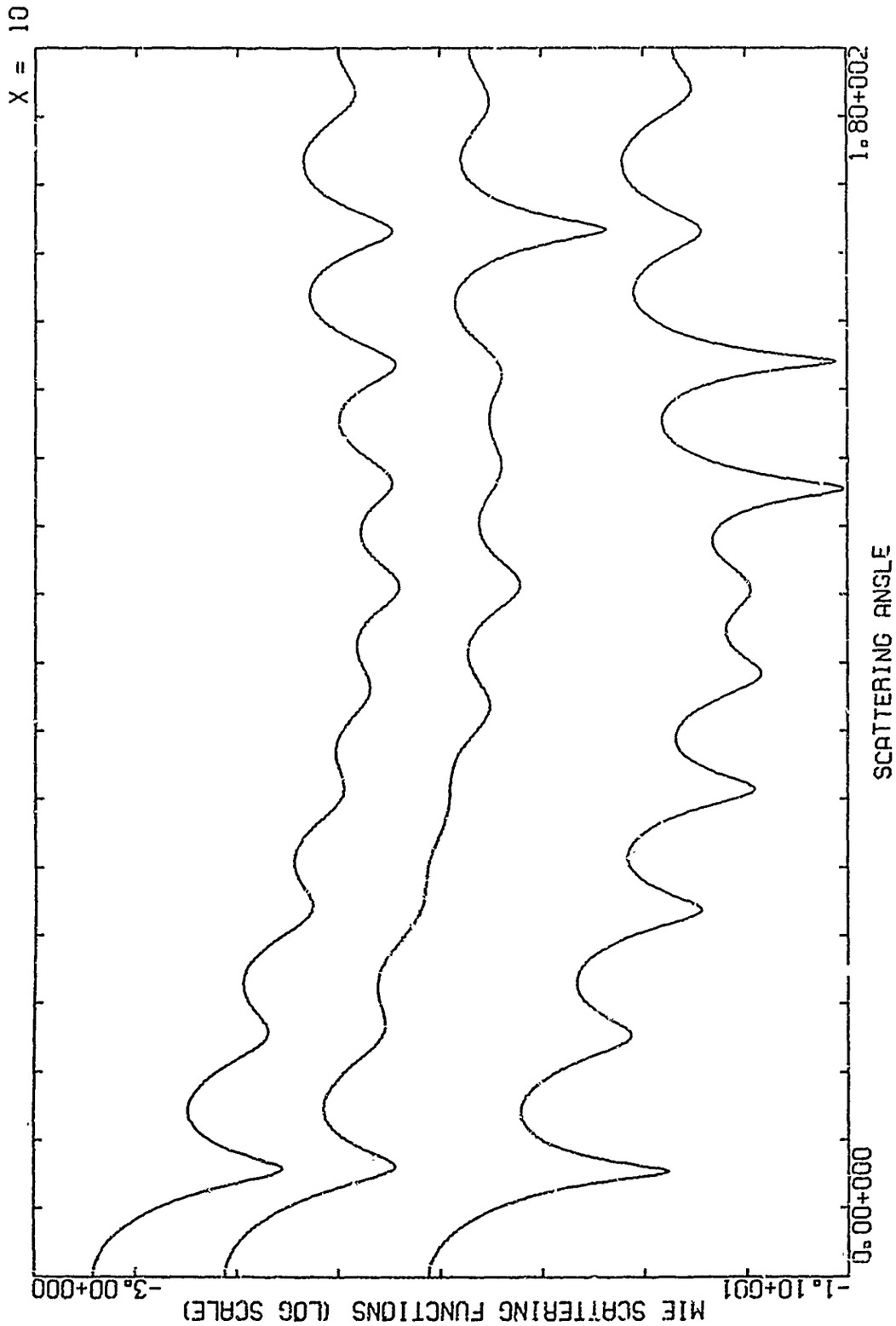

X = 5
0.00+000
1.80+002
SCATTERING ANGLE
-1.10+001
-4.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

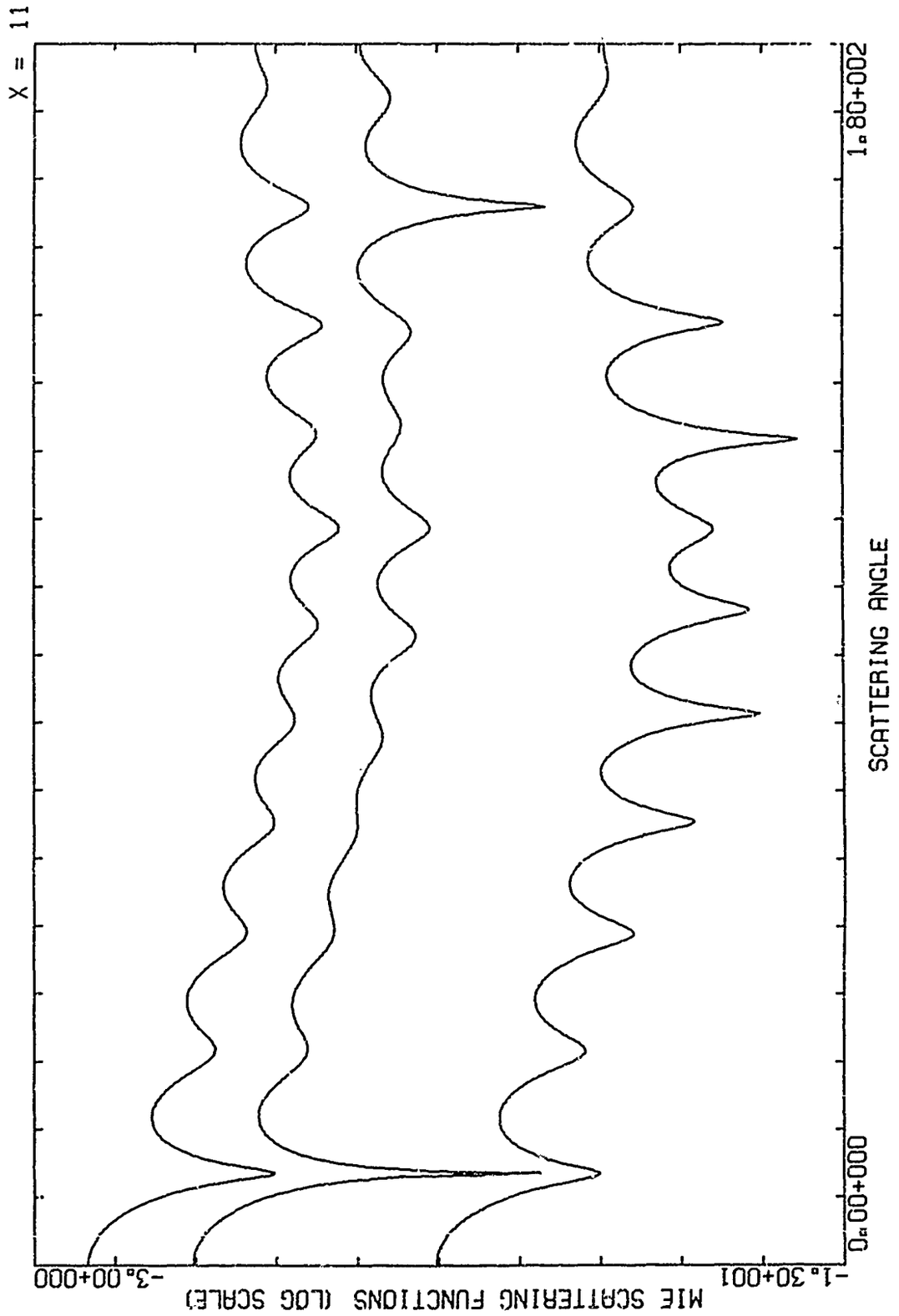

X = 6
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.10+001
-4.00+000
0.00+000
1.80+002
SCATTERING ANGLE

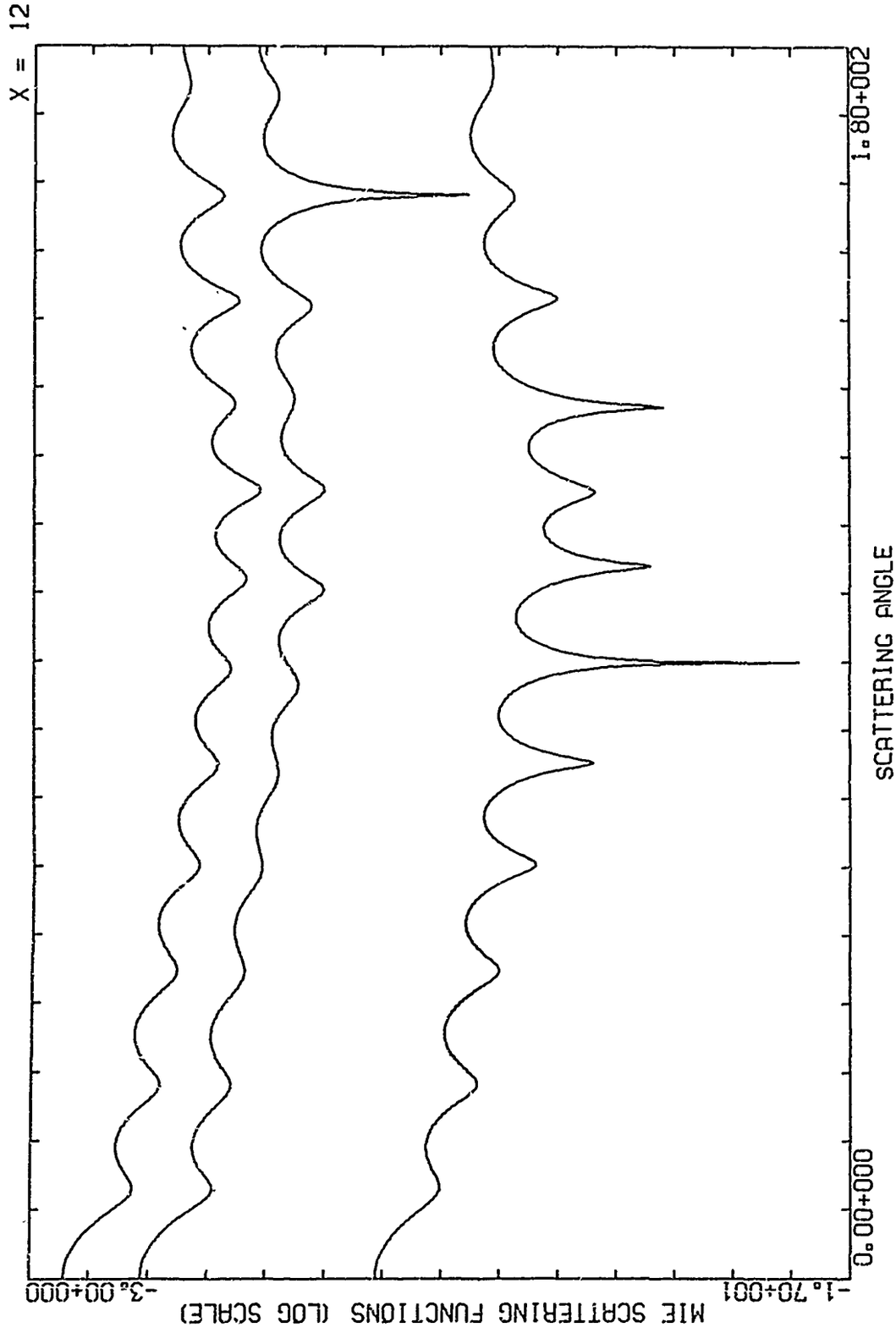

X = 7
0.00+000
1.80+002
SCATTERING ANGLE
-1.10+001
-3.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

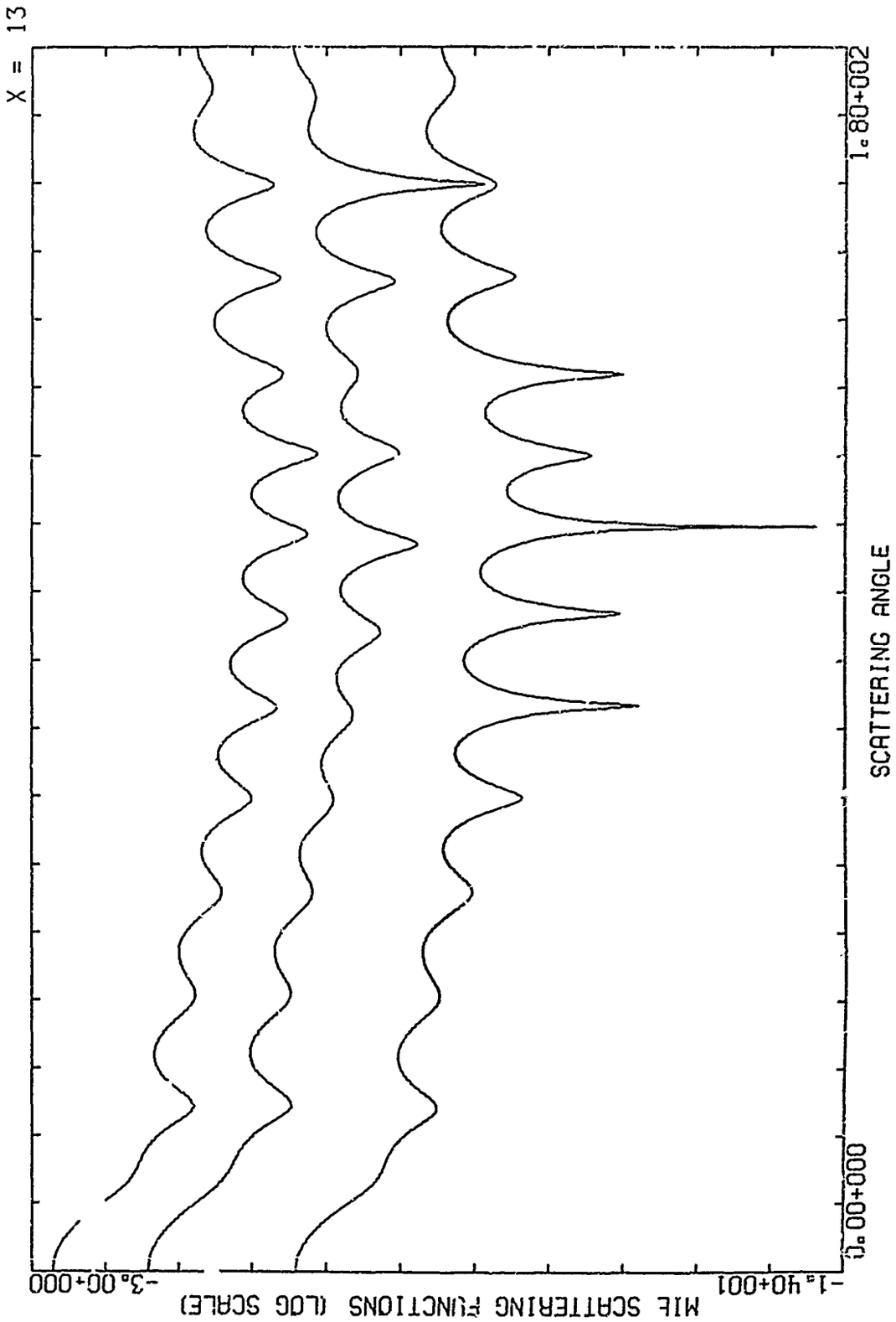

X = 8
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.10+001
-3.00+000
0.00+000
1.80+002
SCATTERING ANGLE

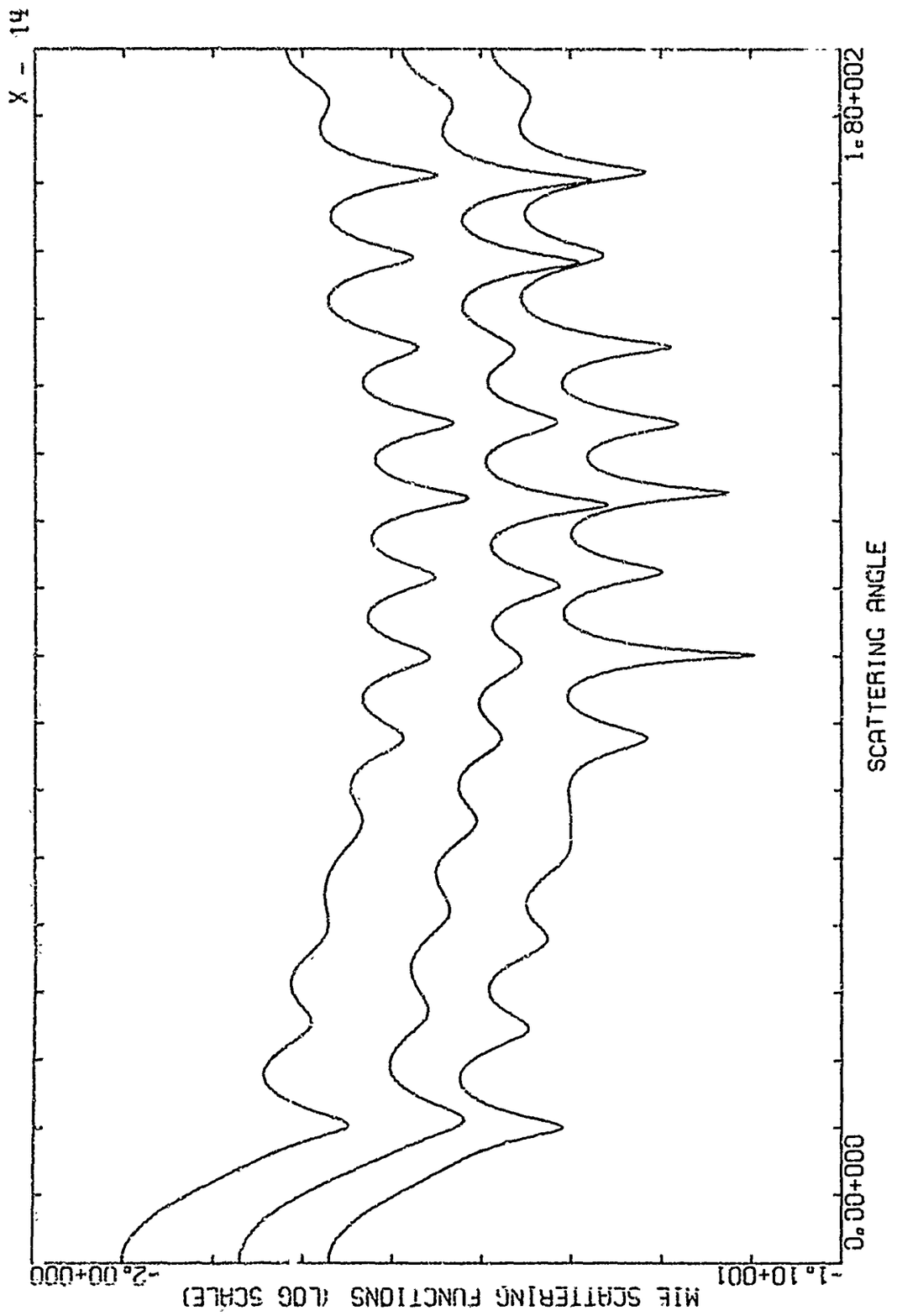

X = 9
0.00+000
1.80+002
SCATTERING ANGLE
-1.10+001
-3.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

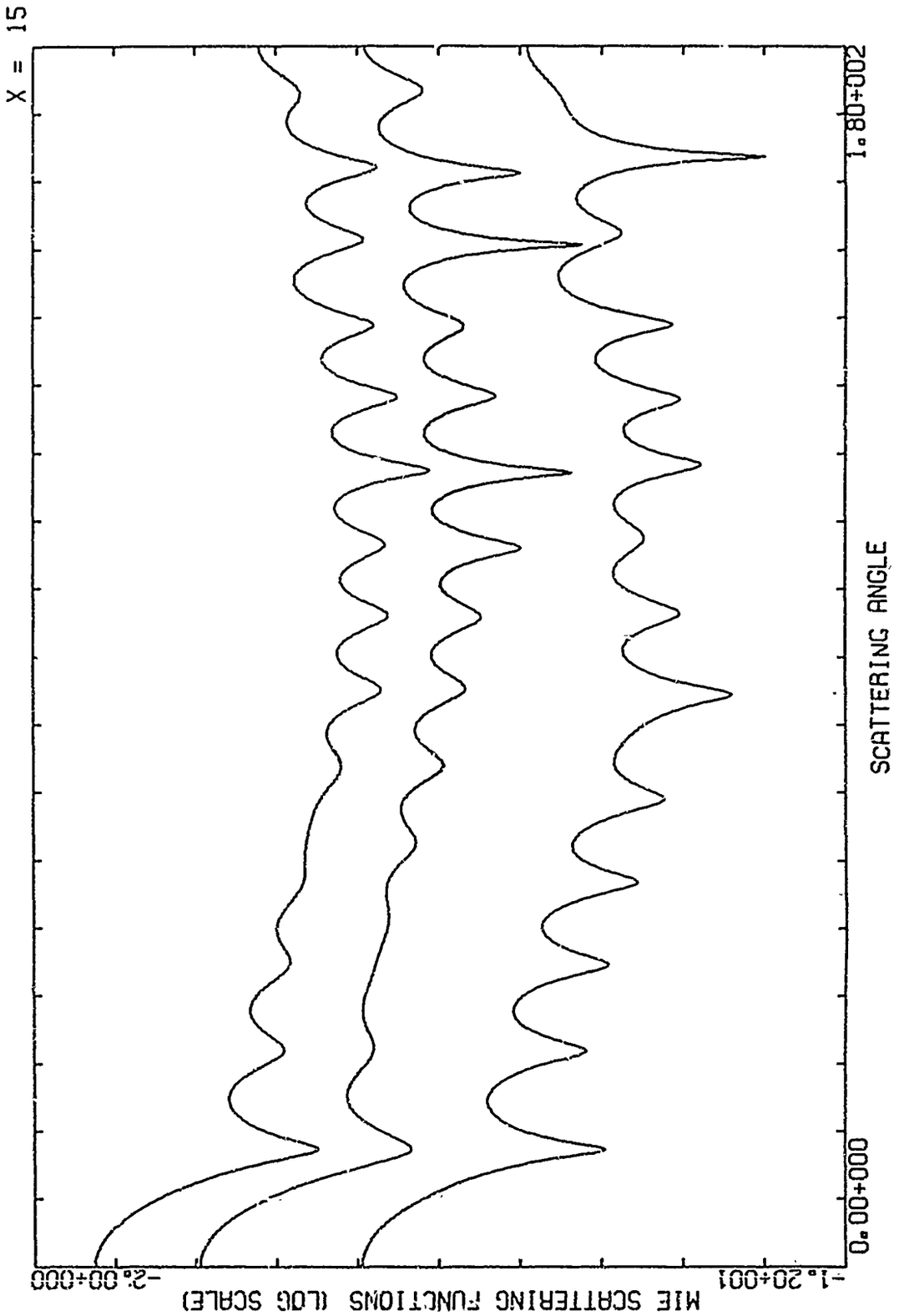

X = 10
0.00+000
1.80+002
SCATTERING ANGLE
-1.10+001
-3.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

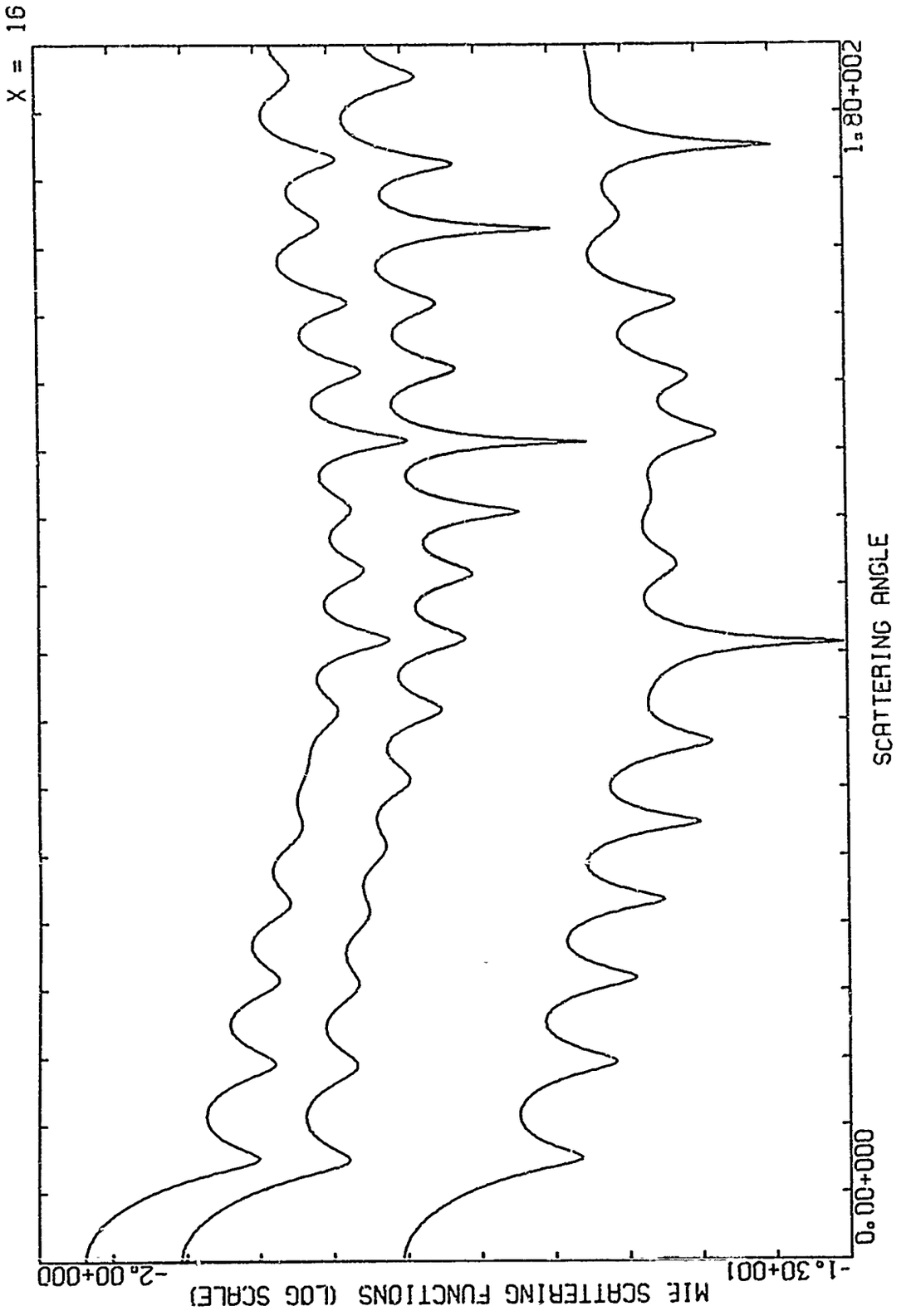

X = 11
0.00+000
1.80+002
SCATTERING ANGLE
-1.30+001
-3.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

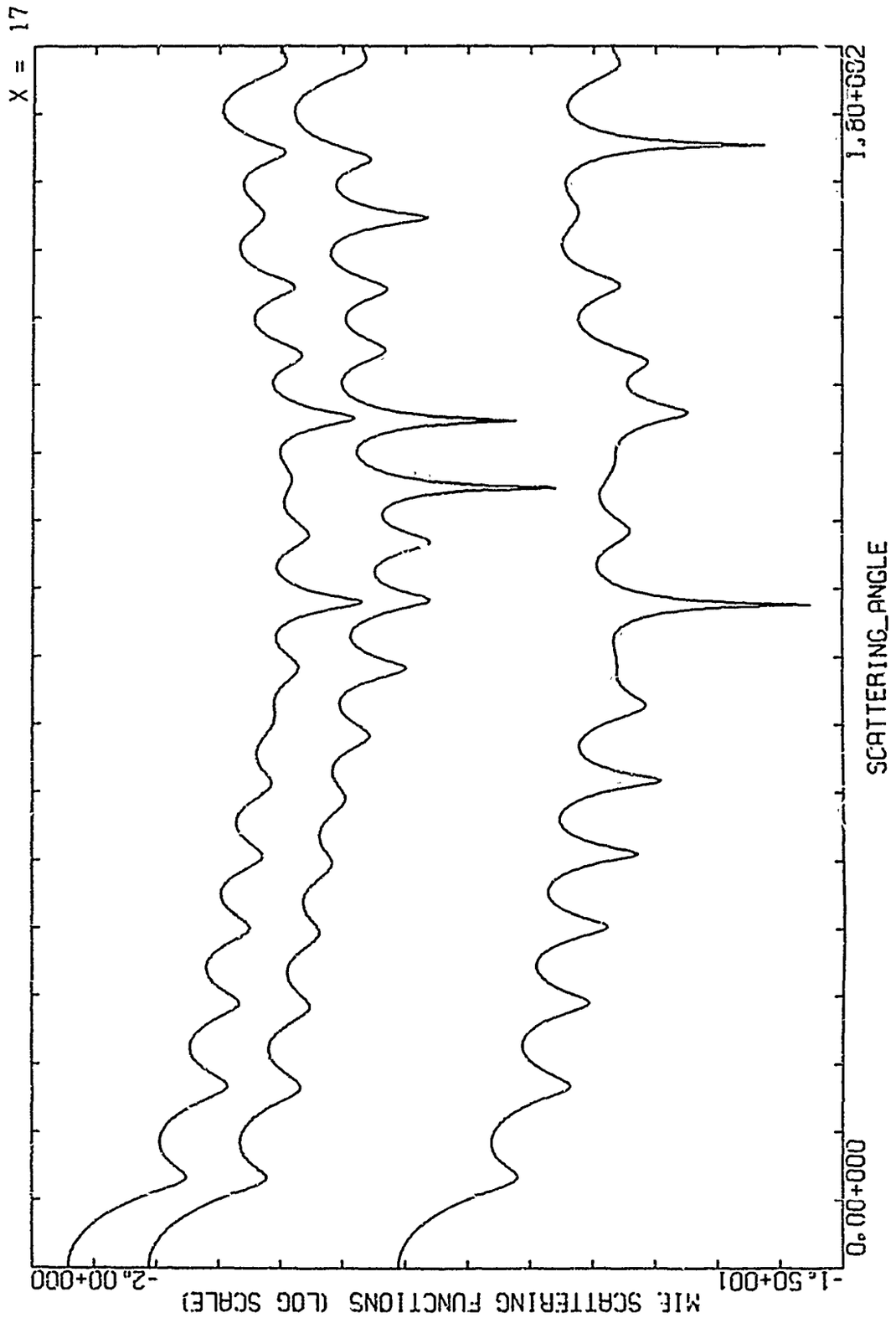

X = 12
0.00+000
1.80+002
SCATTERING ANGLE
-1.70+001
-3.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

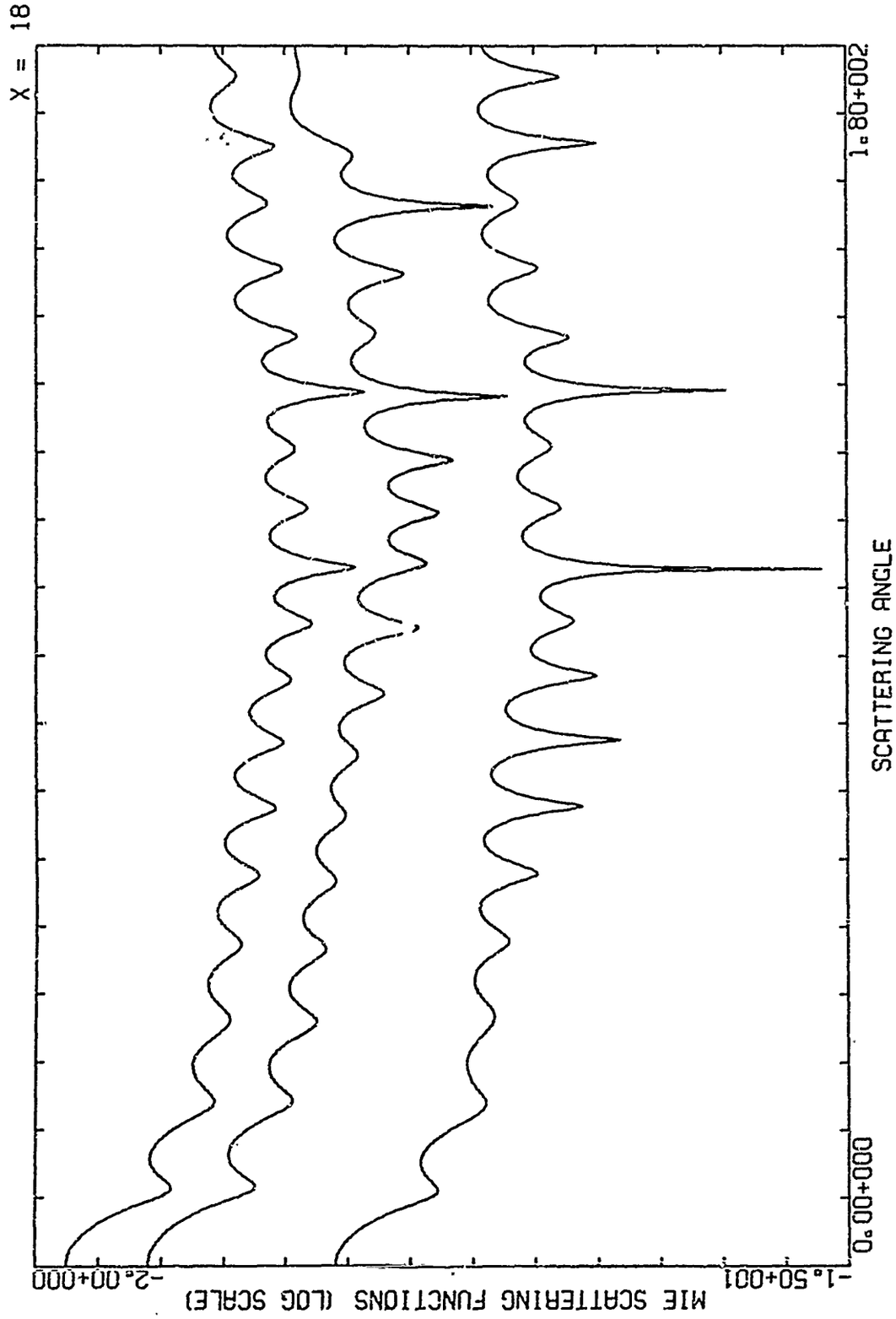

X = 13
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-3.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

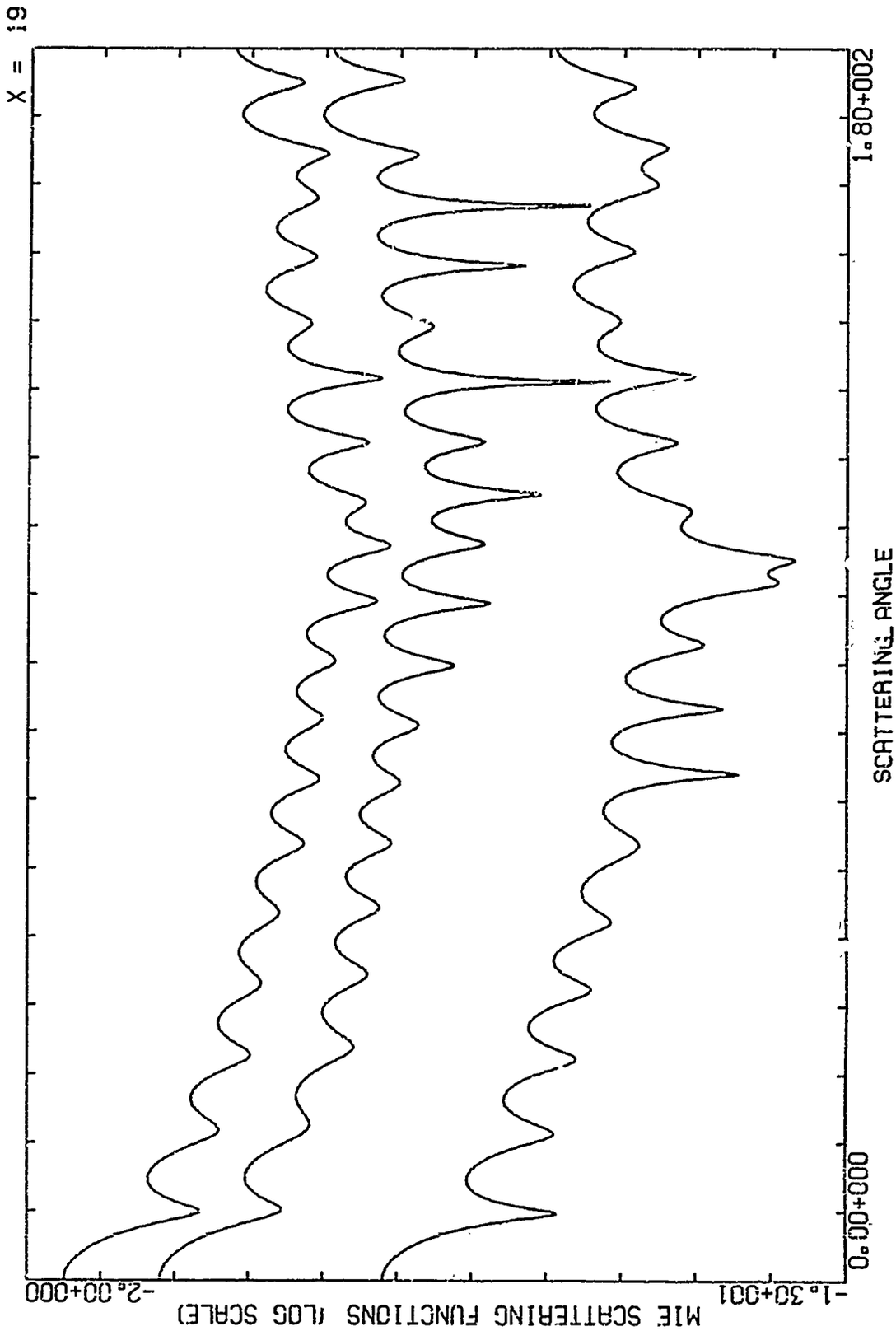

X - 14
0.00+000
1.80+002
SCATTERING ANGLE
-1.10+001
-2.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

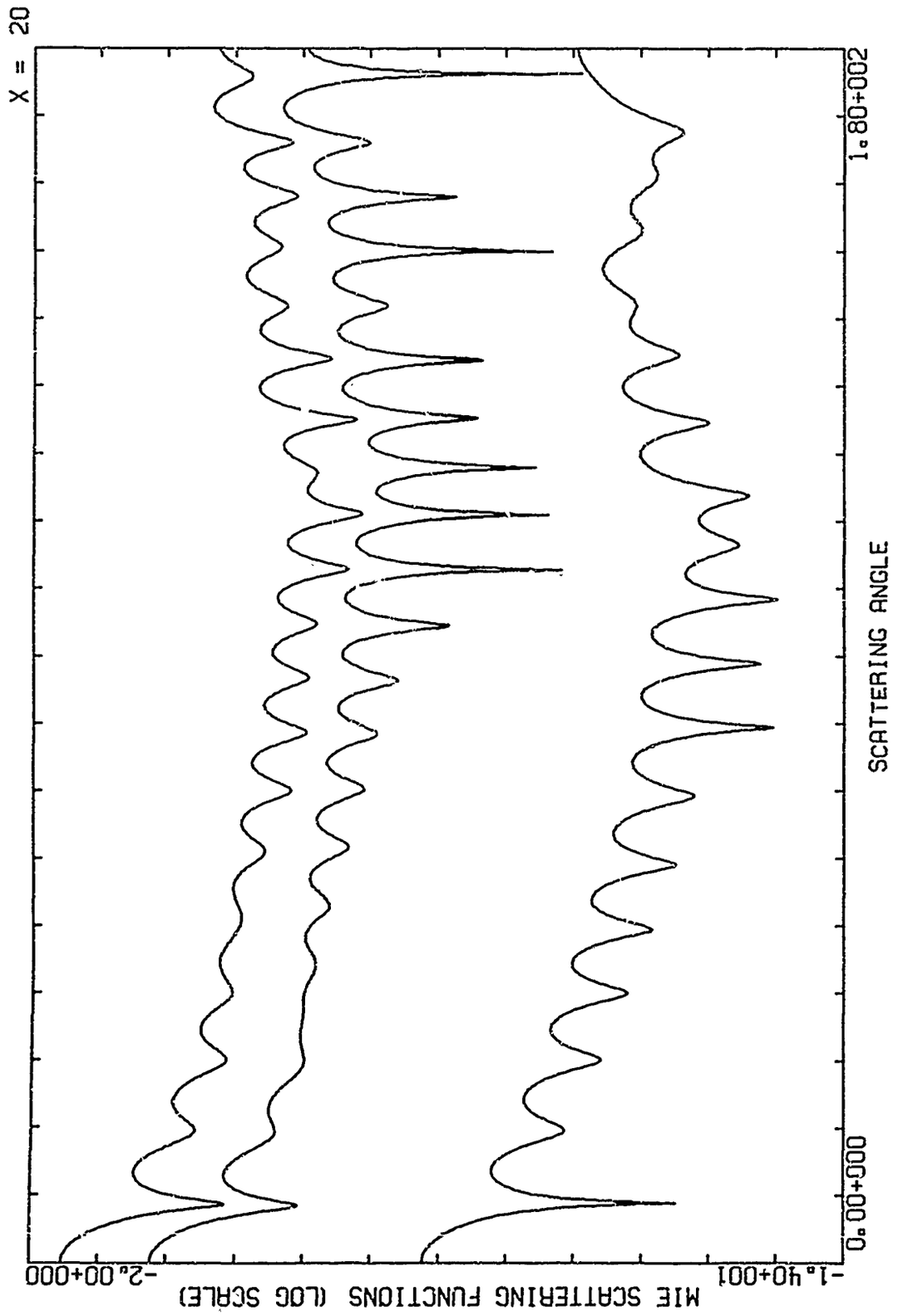

X = 15
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
-2.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

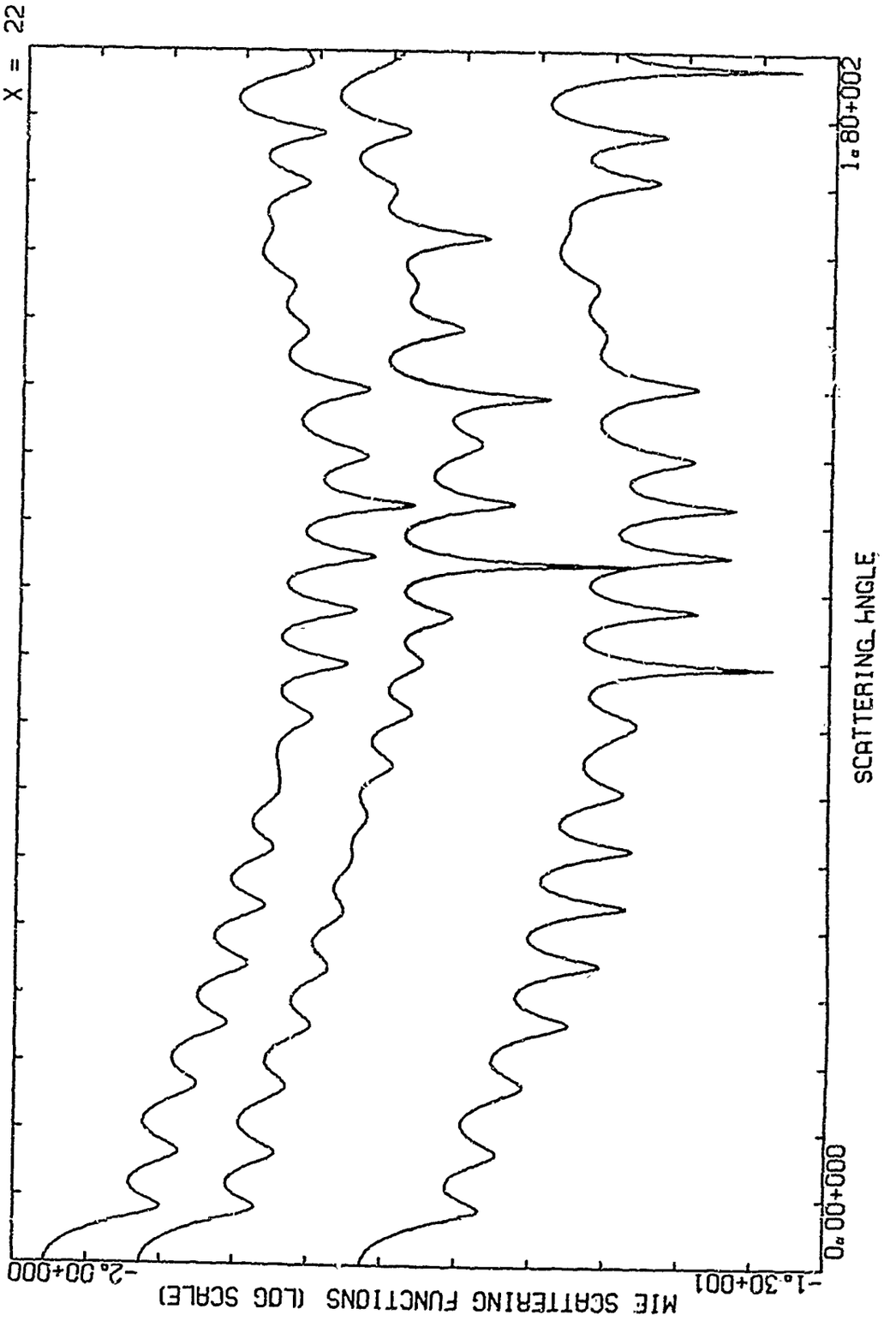

X = 16
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.30+001
-2.00+000
0.00+000
1.80+002
SCATTERING ANGLE

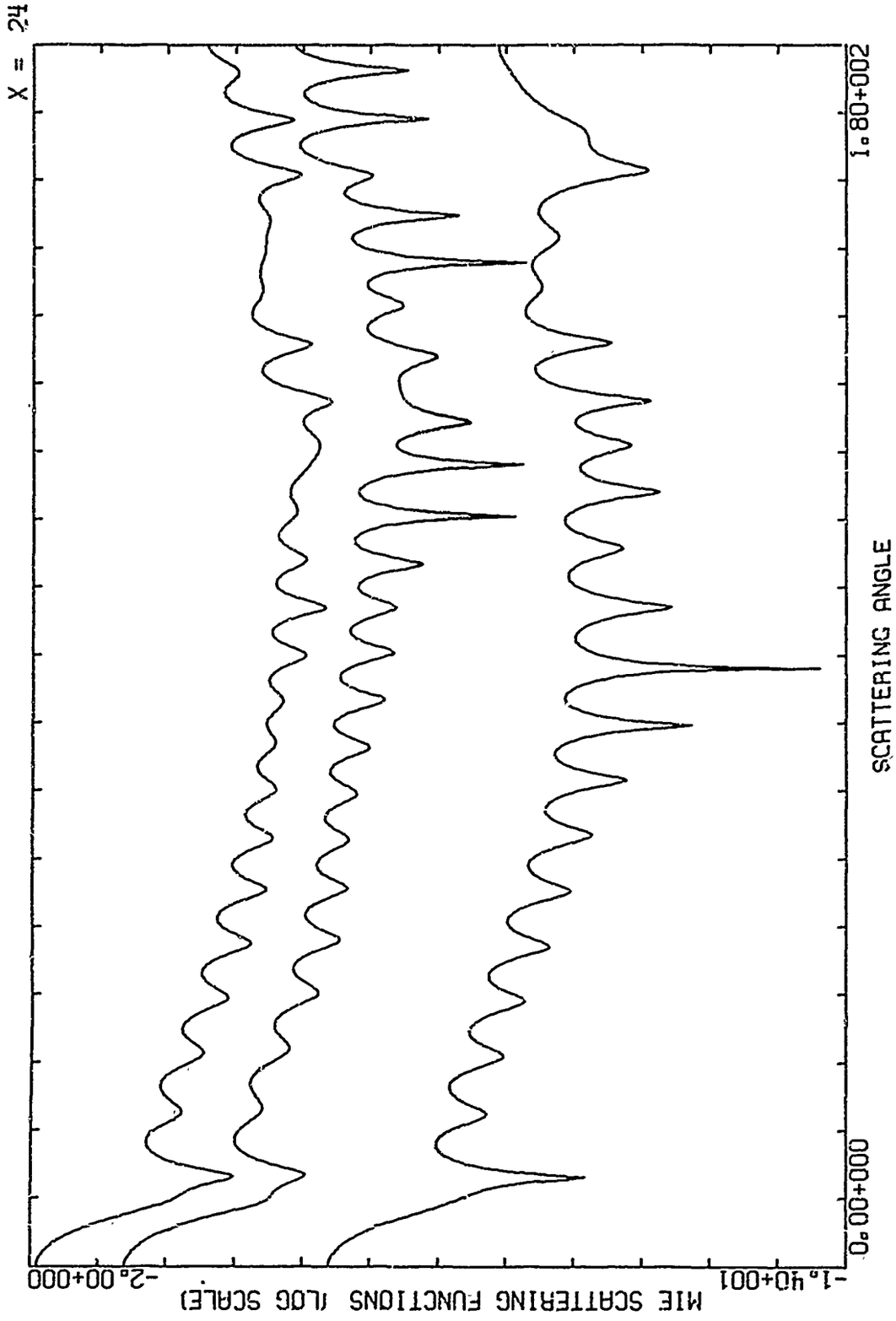

X = 17
0.00+000
1.80+002
SCATTERING ANGLE
-1.50+001
-2.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

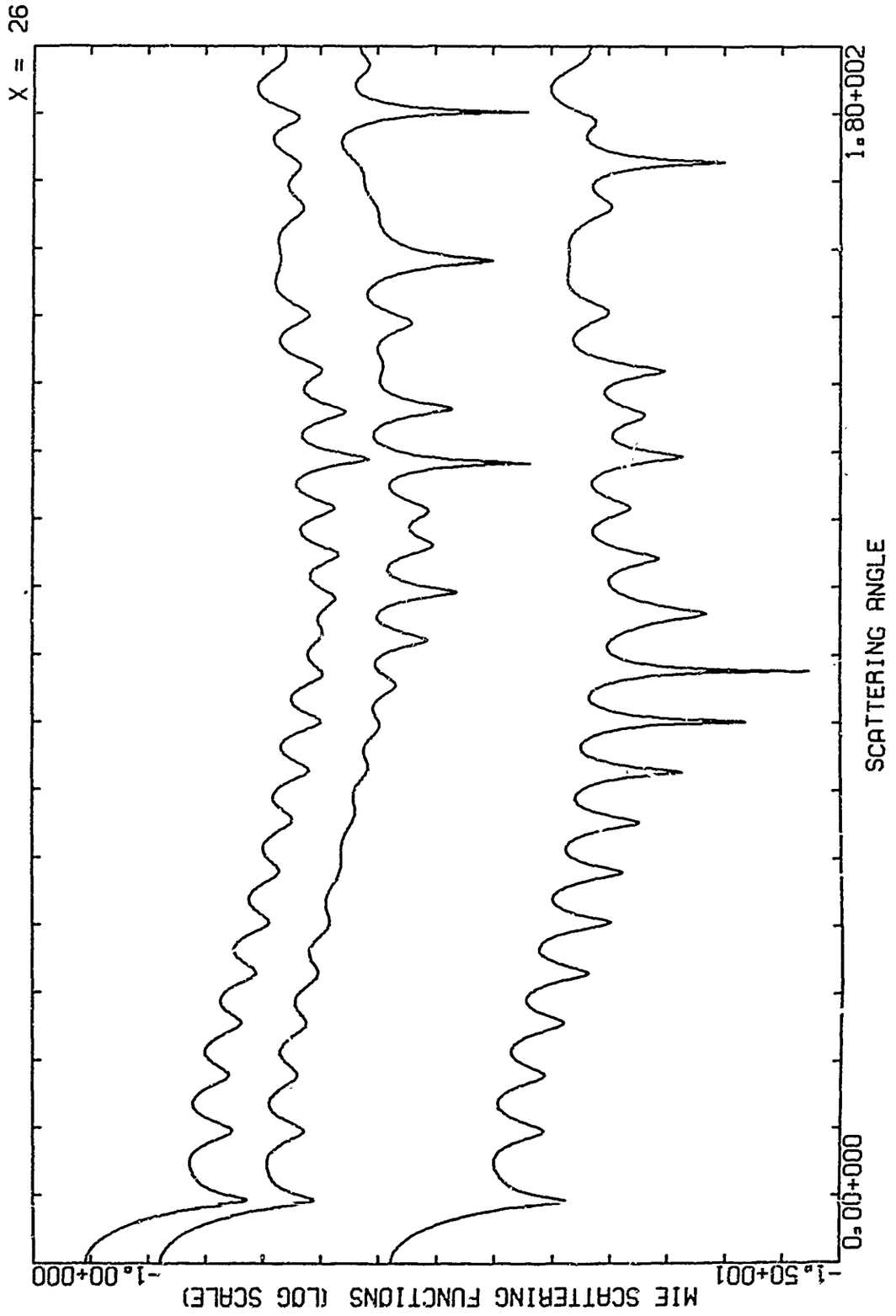

X = 18
0.00+000
1.80+002
SCATTERING ANGLE
-1.50+001
-2.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

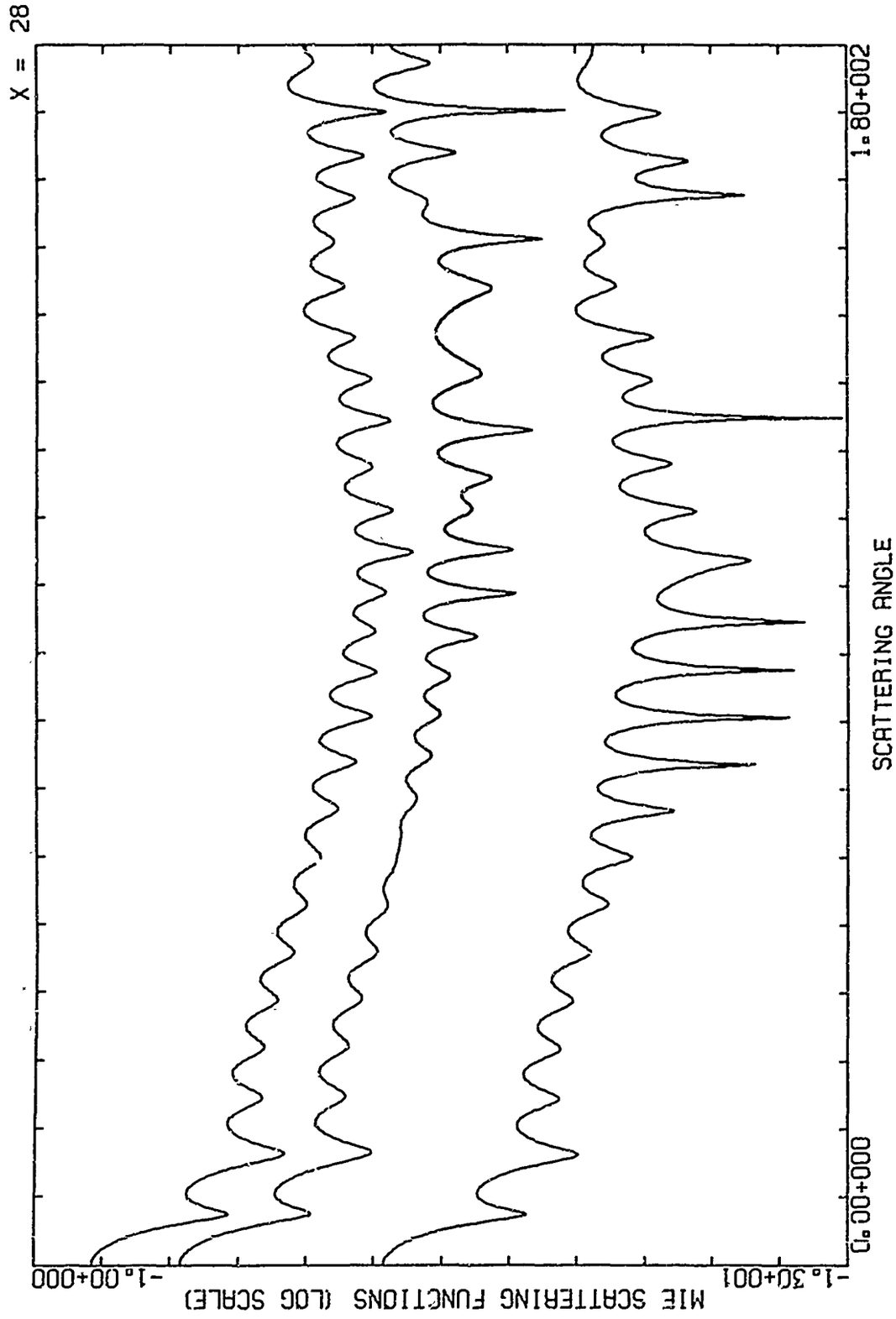

X = 19
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.30+001
-2.00+000
0.00+000
1.80+002
SCATTERING ANGLE

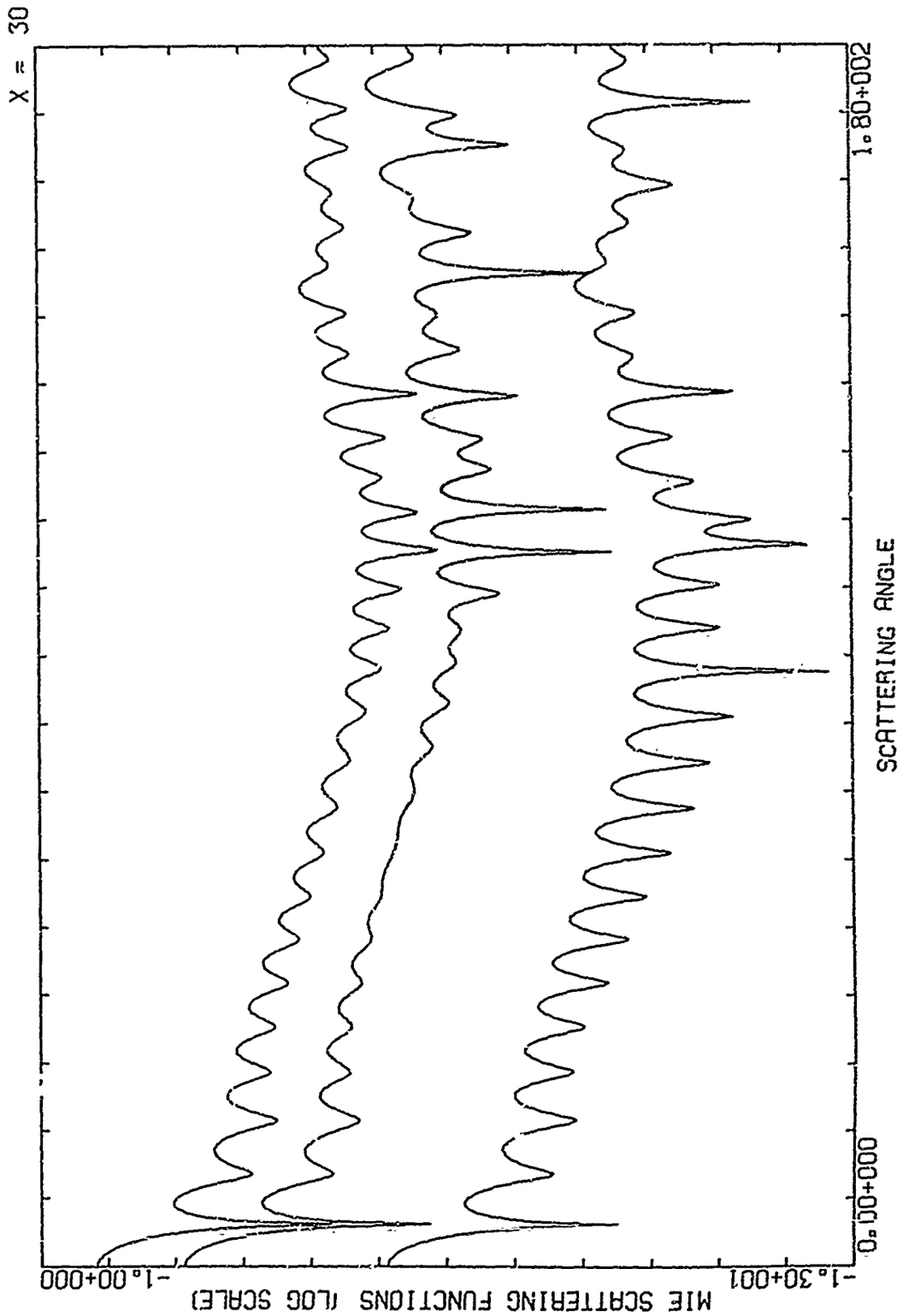

X = 20
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.40+001
-2.00+000
0.00+000
1.80+002
SCATTERING ANGLE

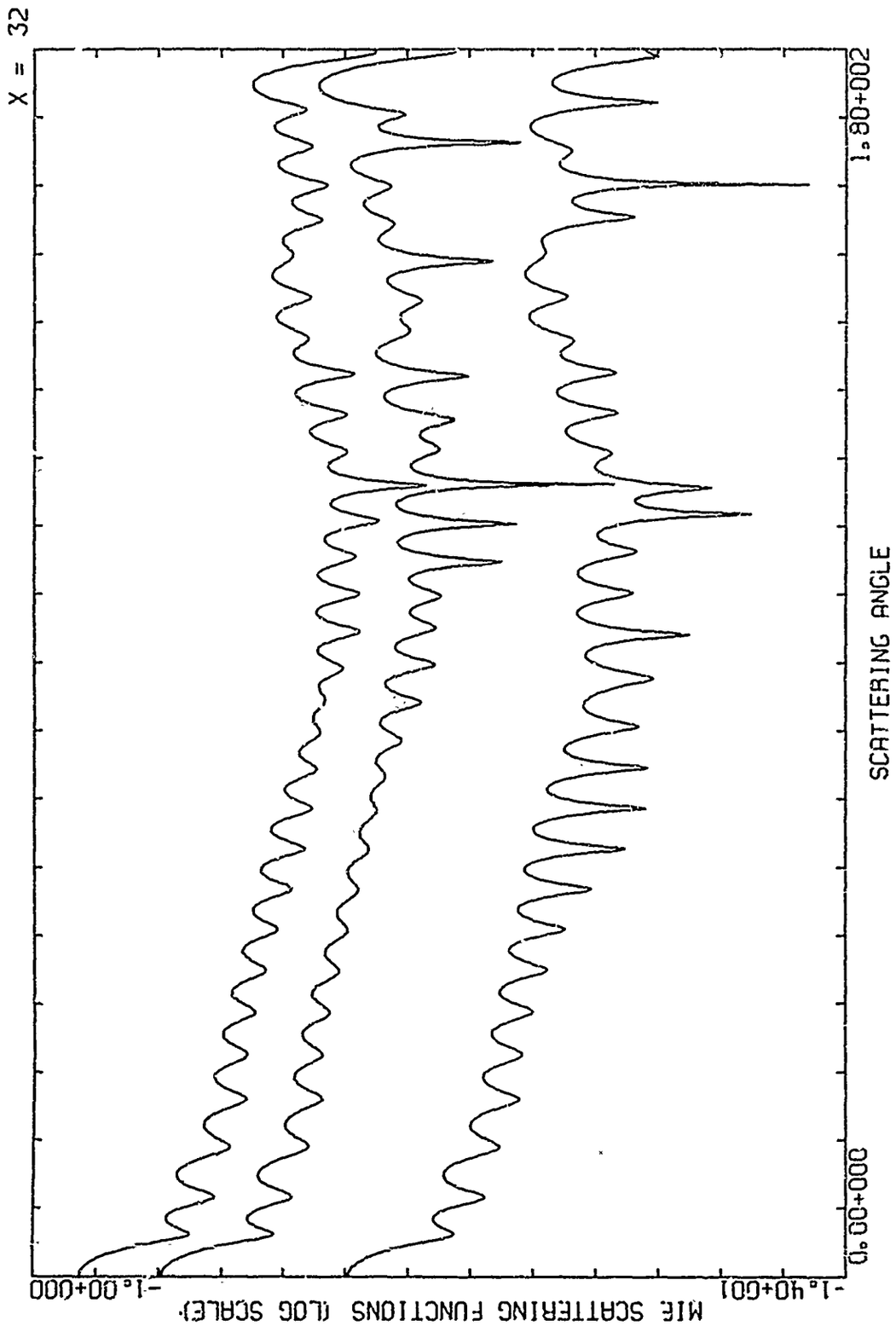

X = 22
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.30+001
-2.00+000
0.00+000
1.80+002
SCATTERING ANGLE

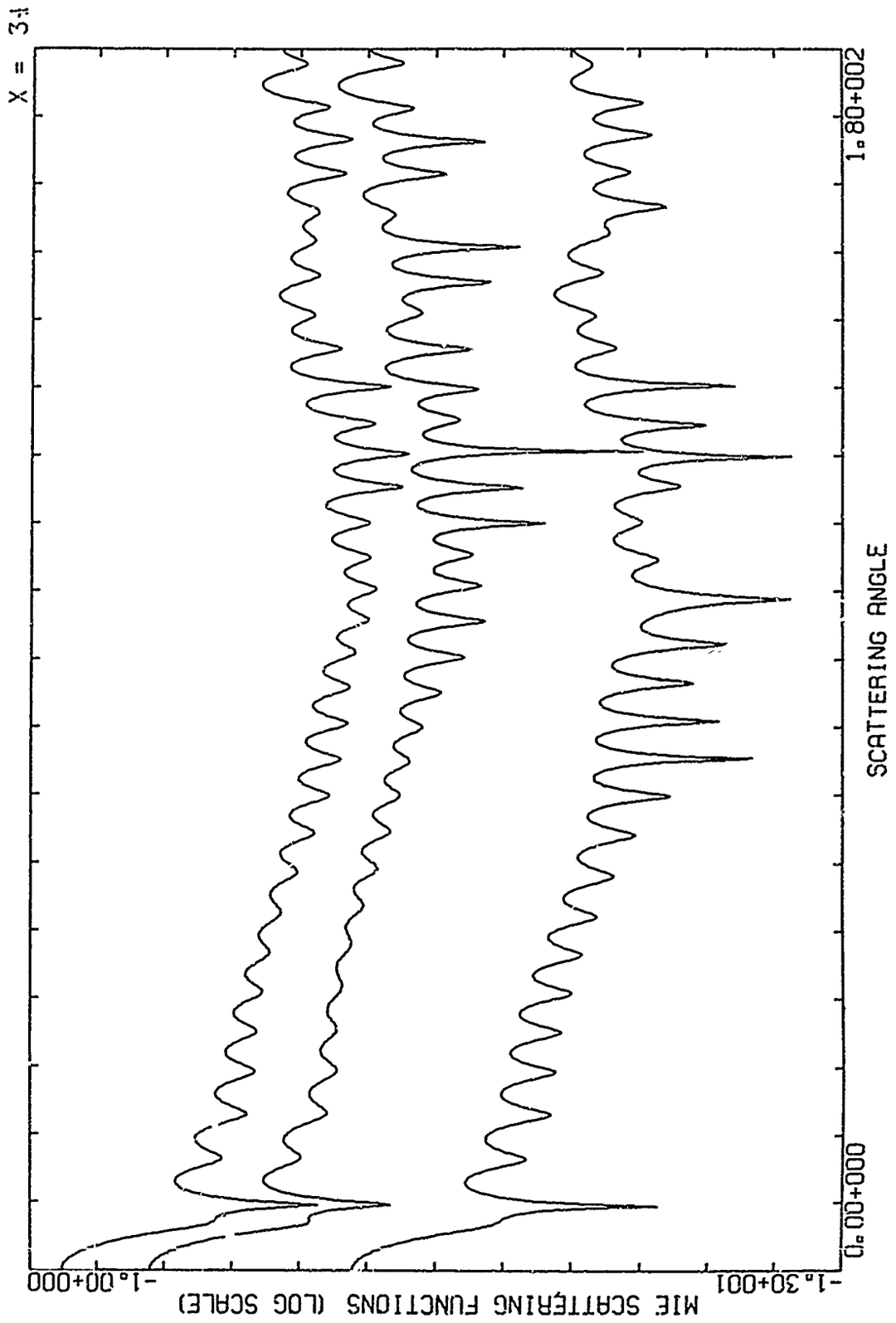

X = 24
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-2.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

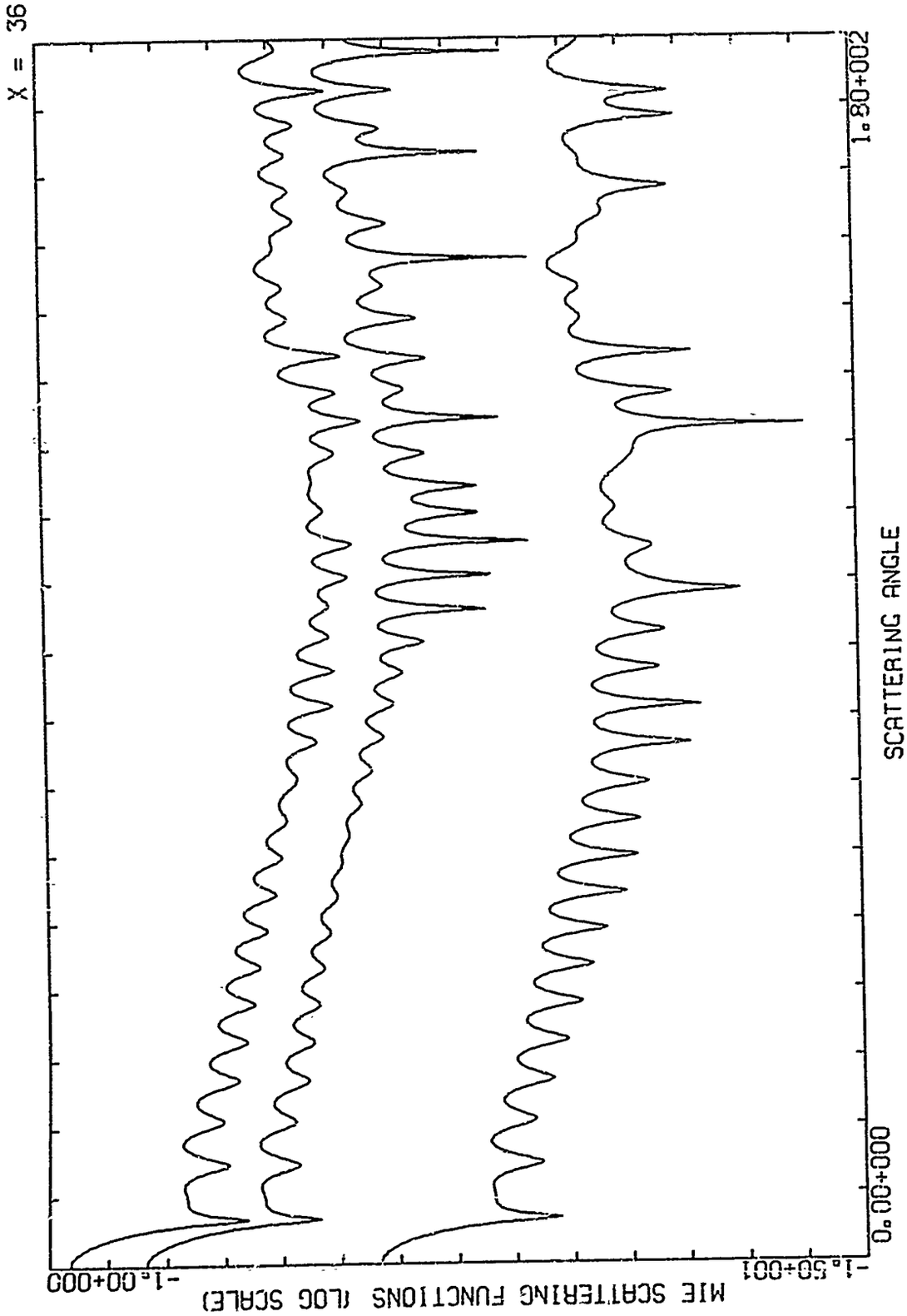

X = 26
0.00+000
1.80+002
SCATTERING ANGLE
-1.50+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

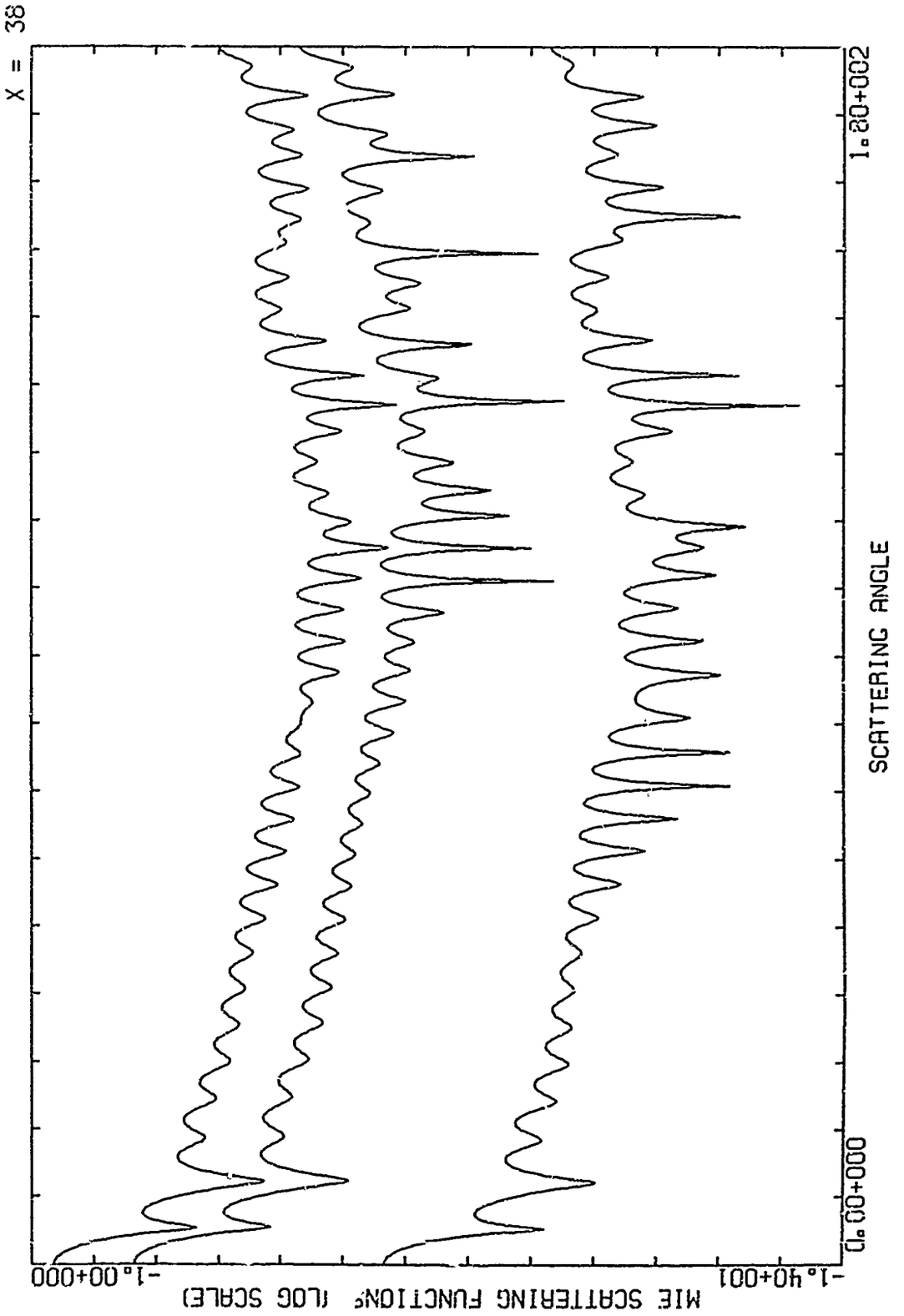

X = 28
0.00+000
1.80+002
SCATTERING ANGLE
-1.30+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

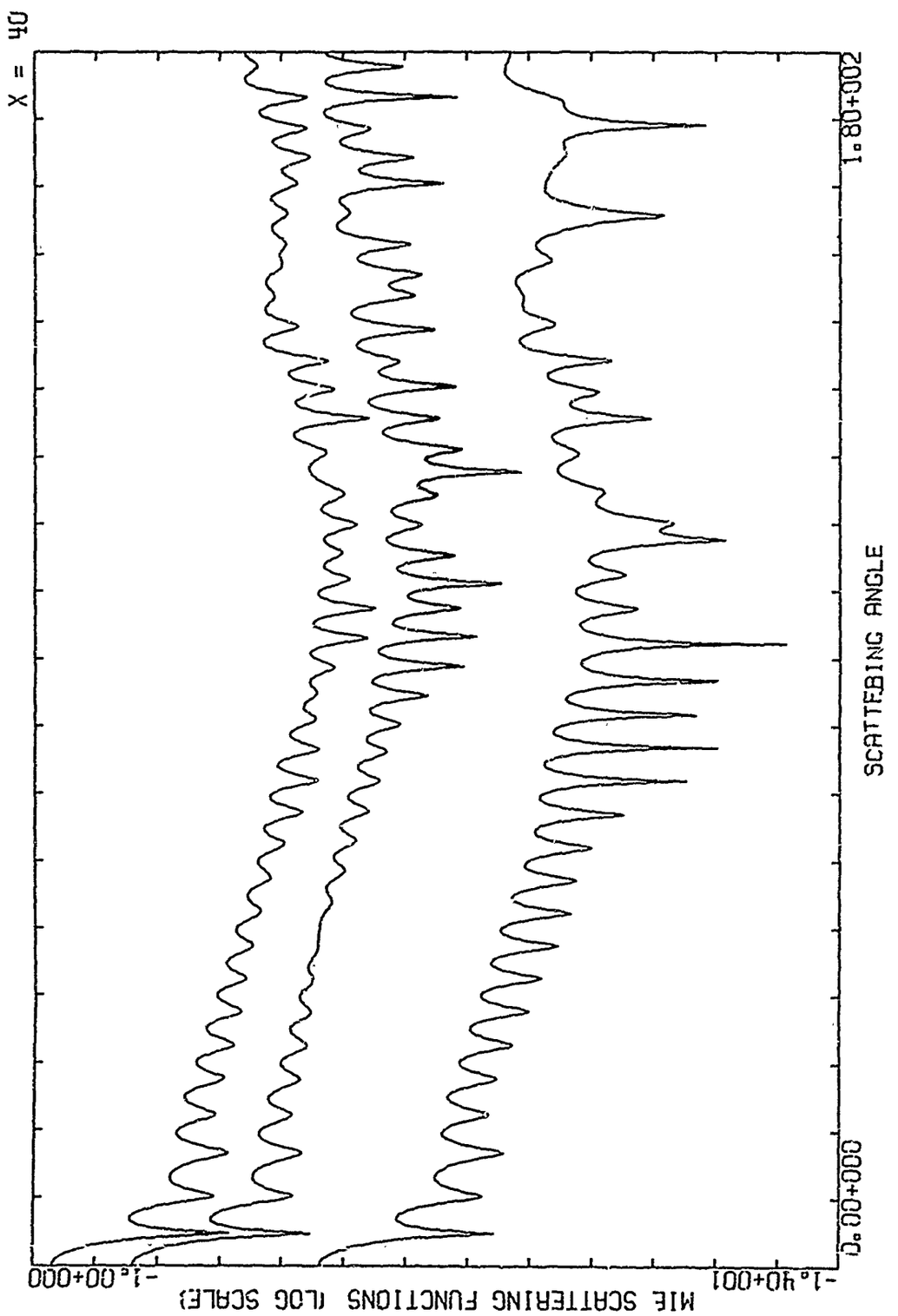

X = 30
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.00+000
-1.30+001
0.00+000
SCATTERING ANGLE
1.80+002

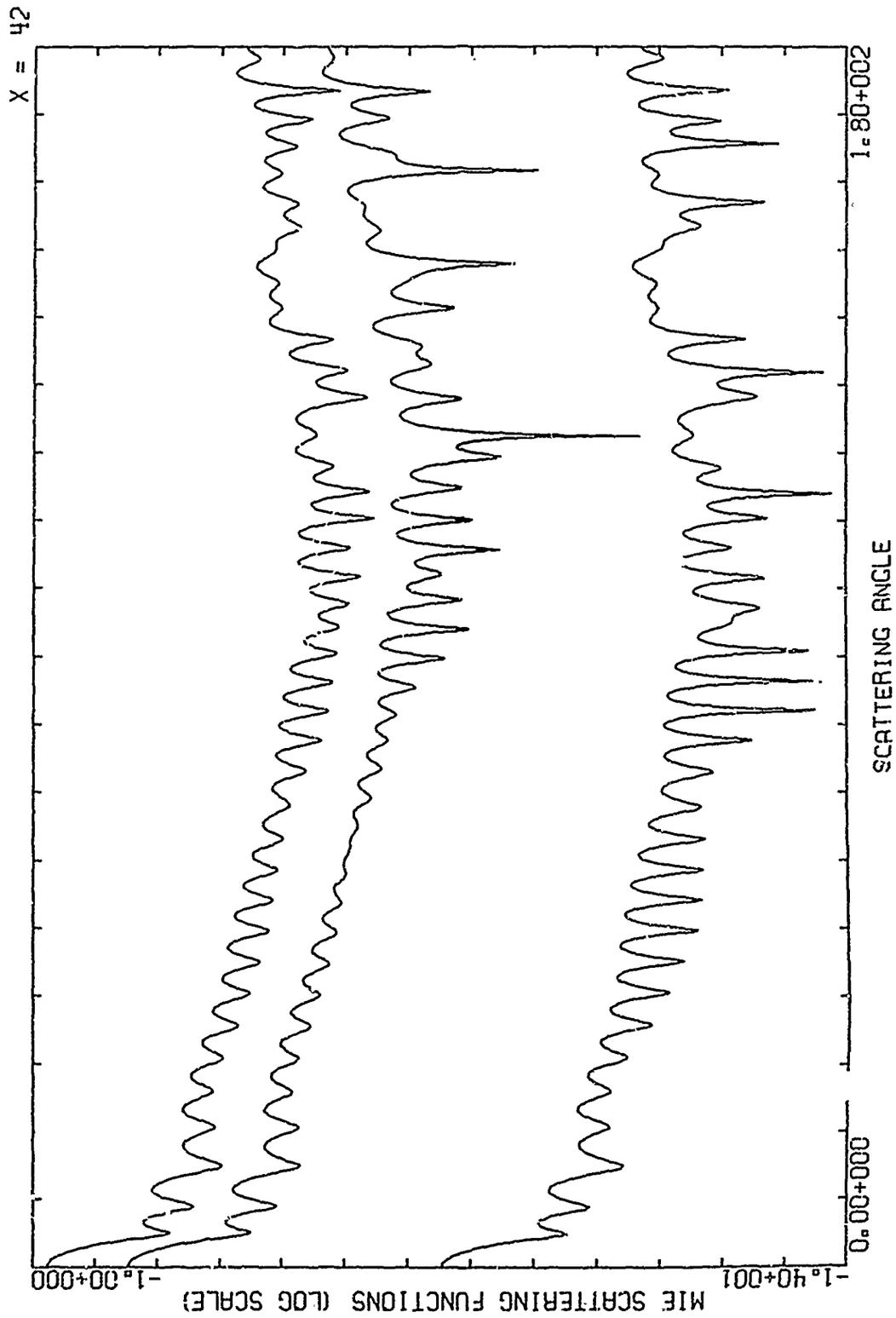

X = 32
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

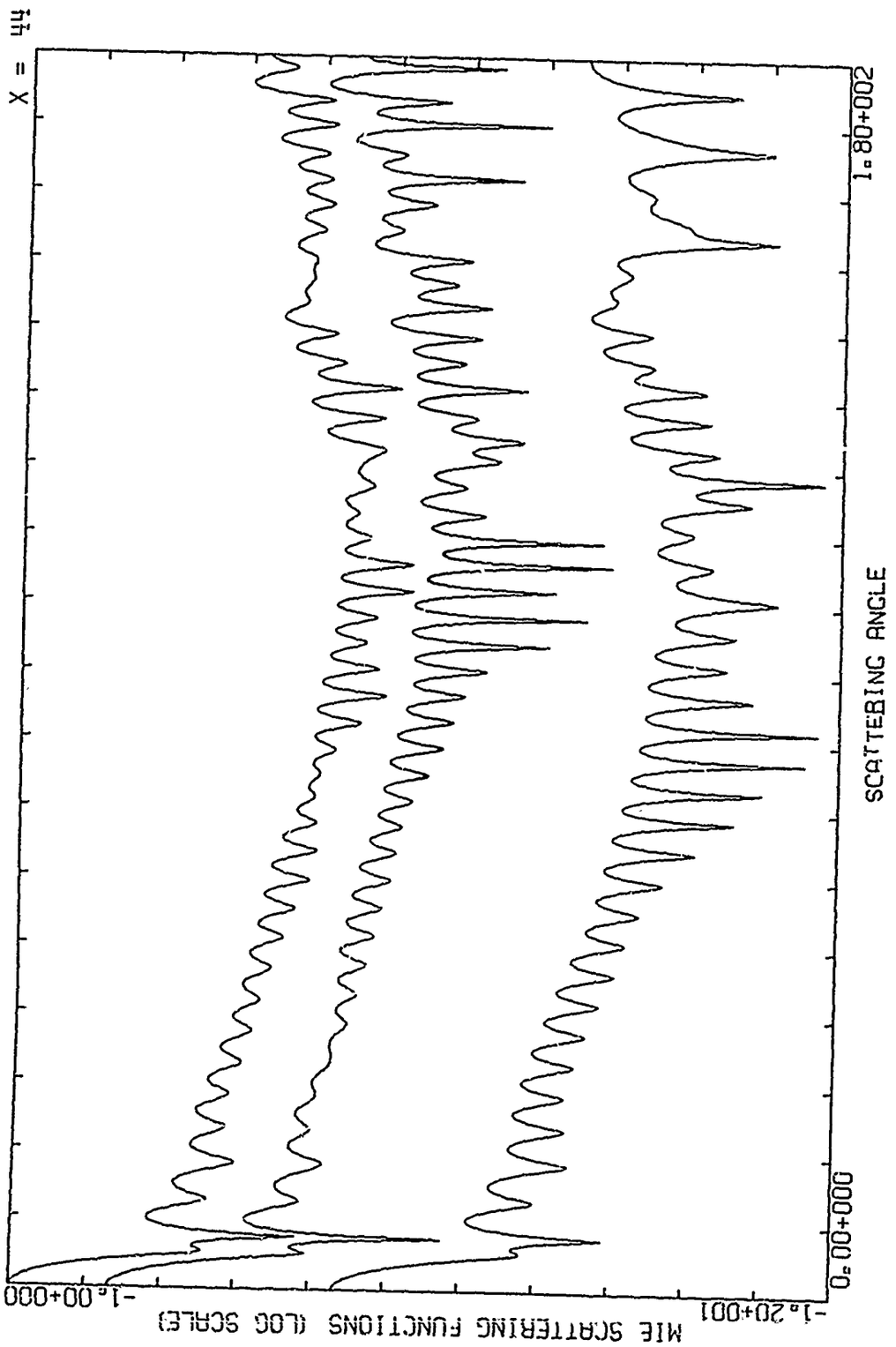

X = 3.1
0.00+000
1.80+002
SCATTERING ANGLE
-1.30+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

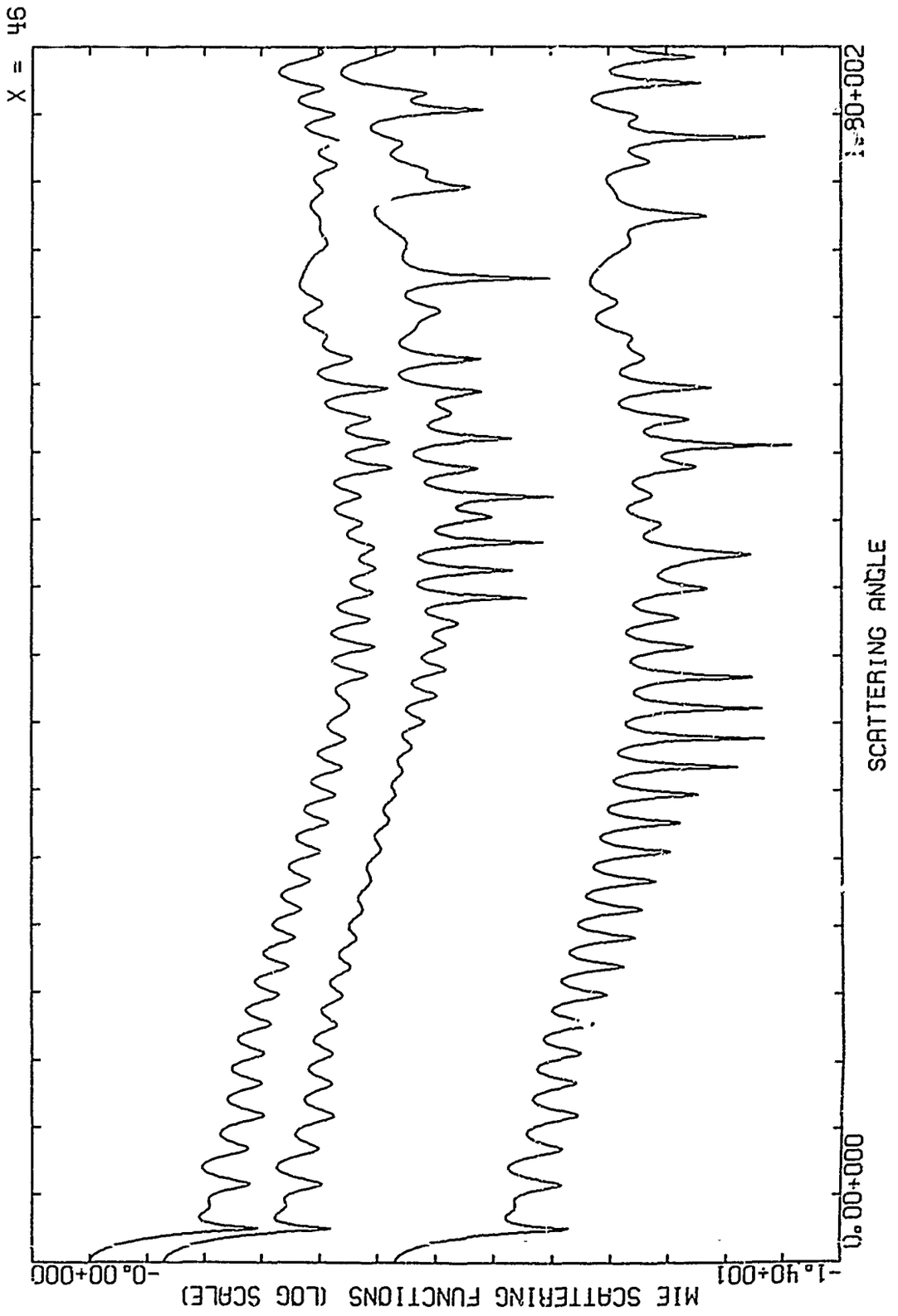

X = 36
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.00+000
-1.50+001
0.00+000
1.80+002
SCATTERING ANGLE

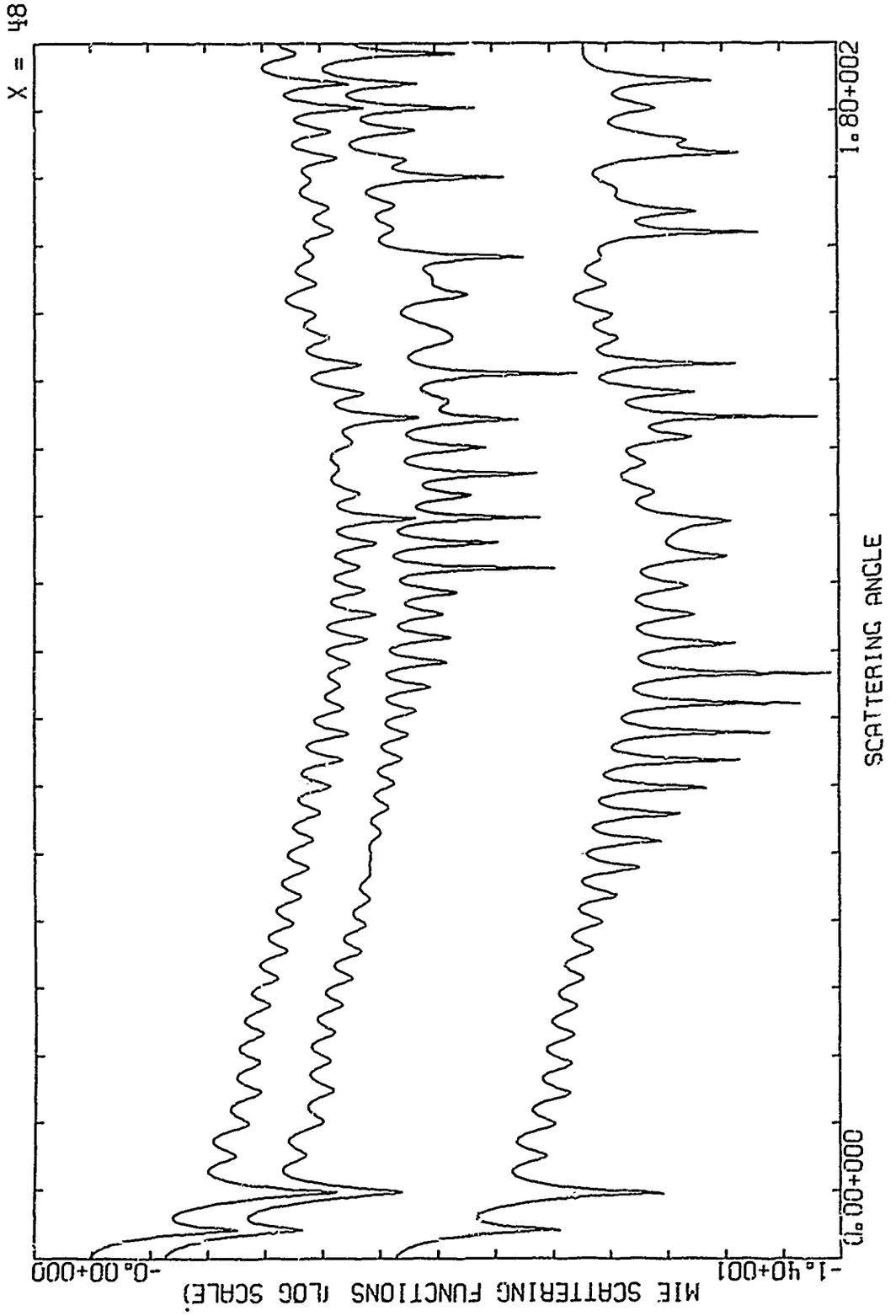

X = 38
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

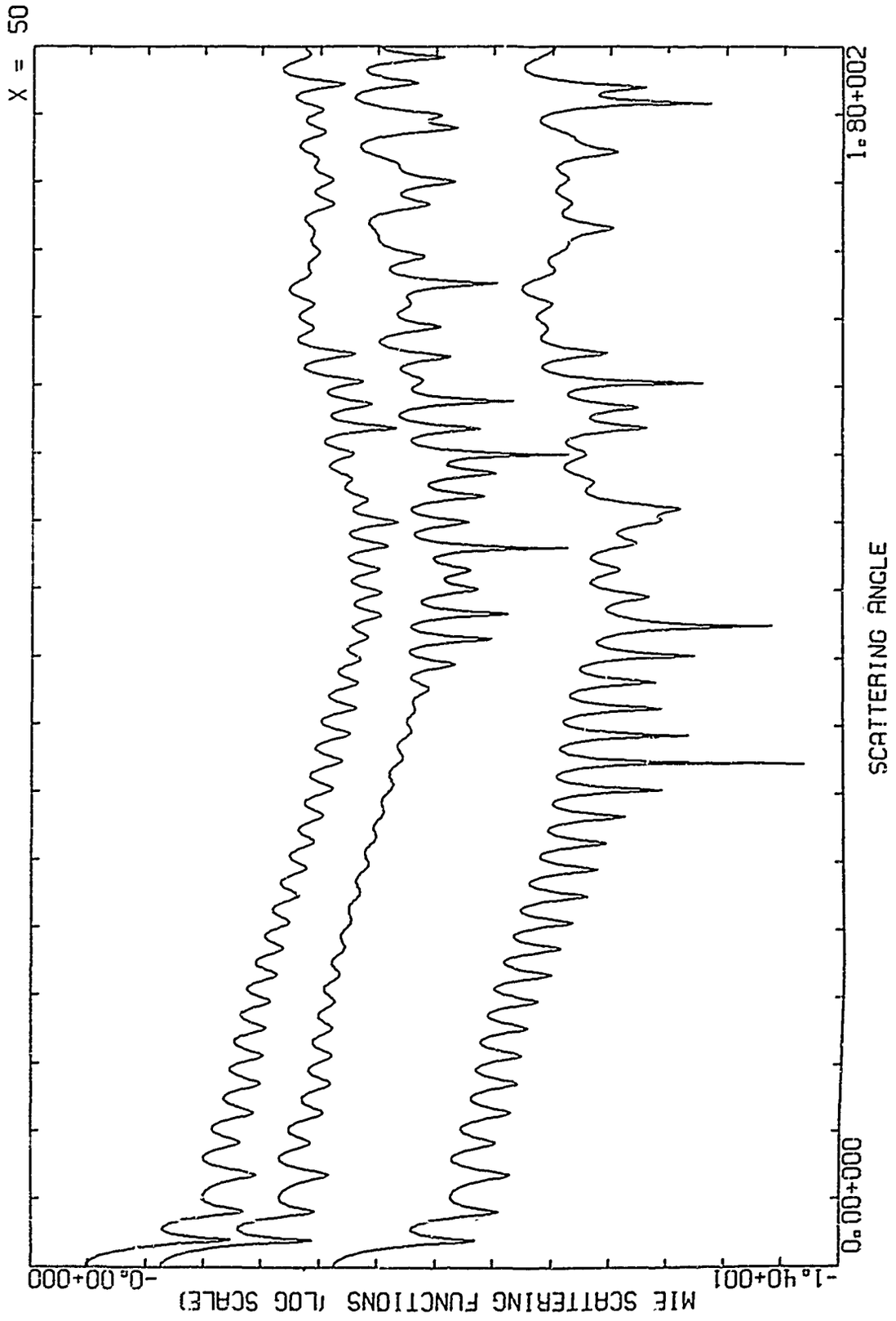

X = 40
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

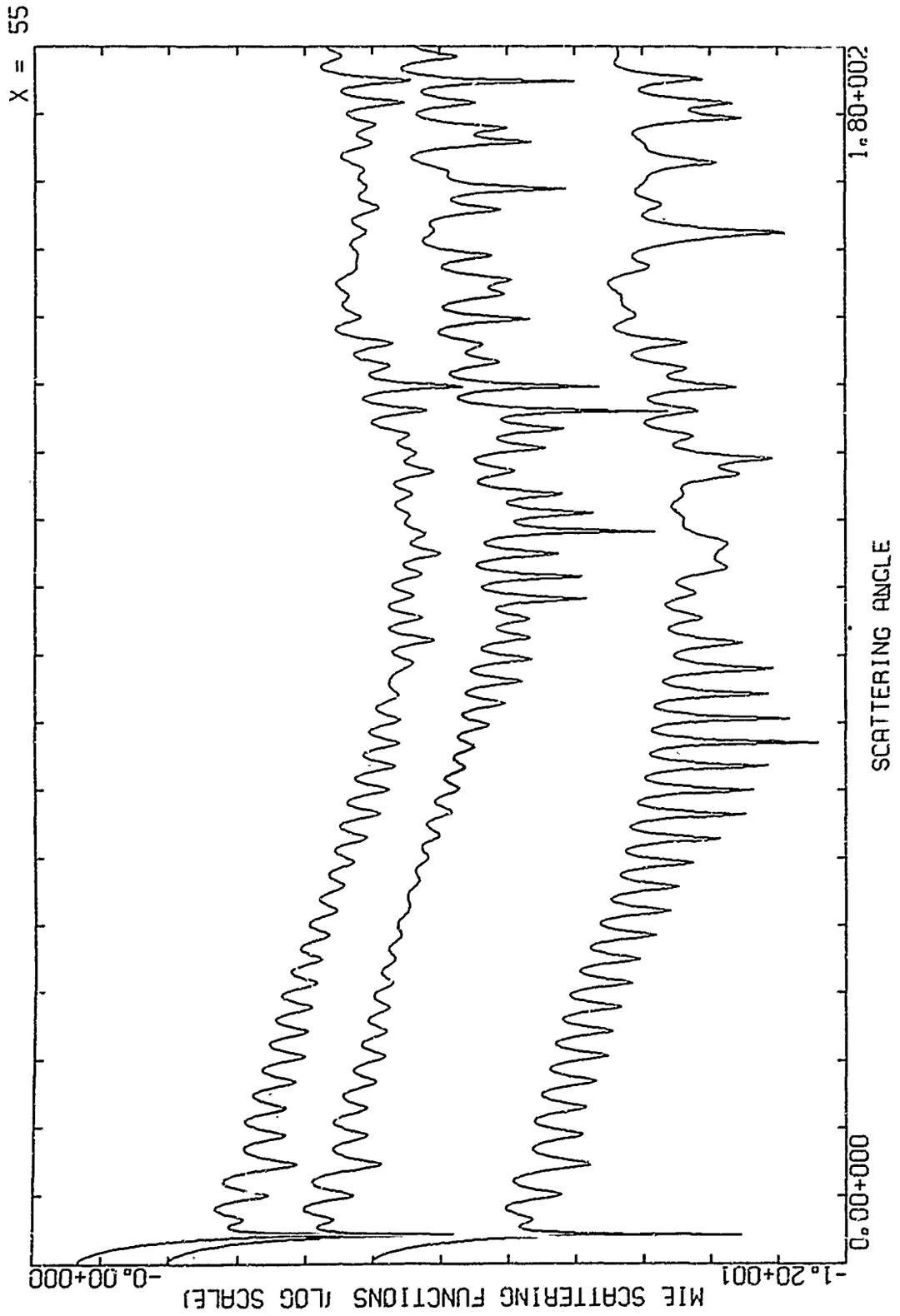

X = 42
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

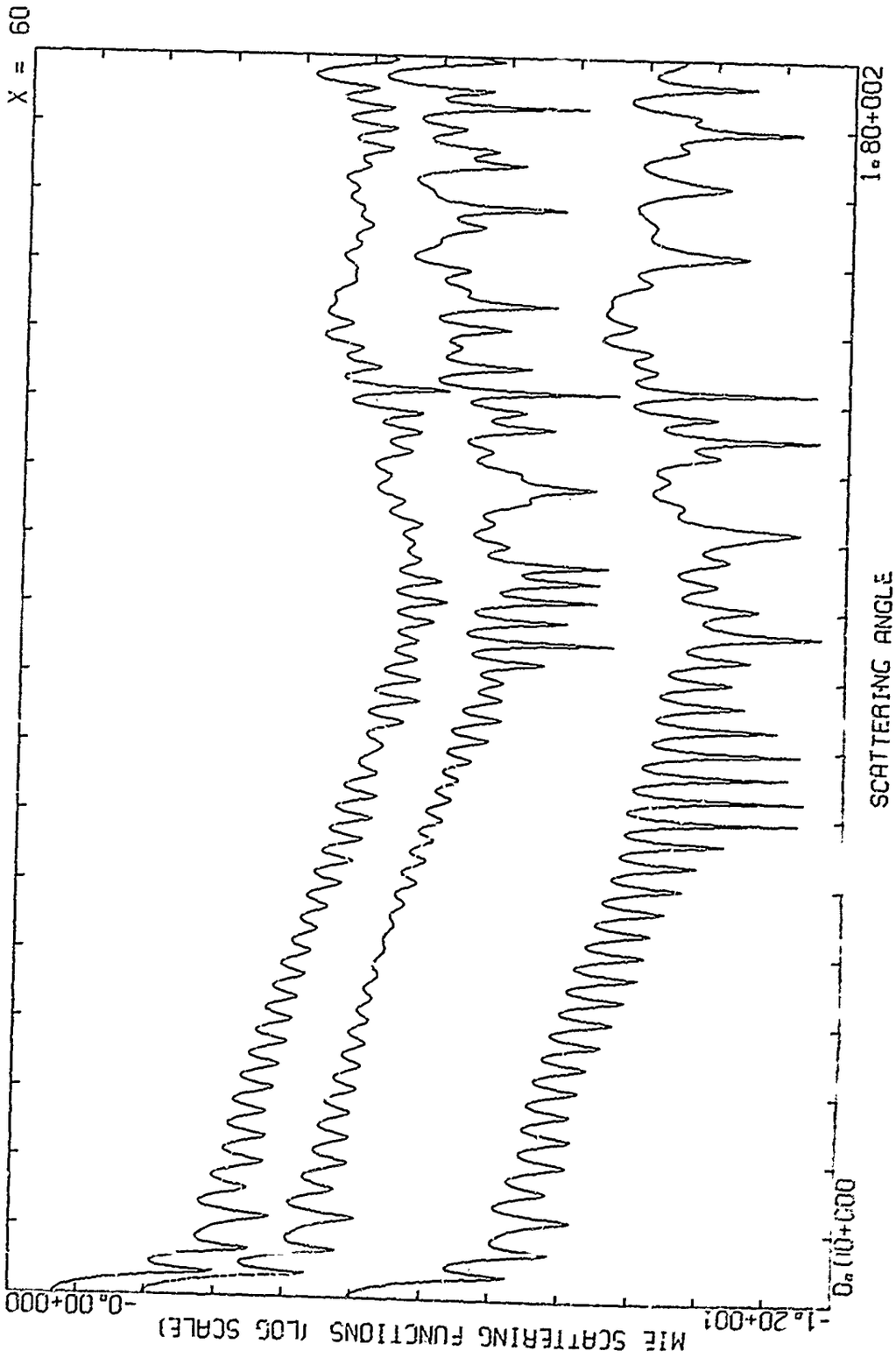

X = 4h
MIE SCATTERING FUNCTIONS (LOG SCALE)
-1.20+001
-1.00+000
0.00+000
1.80+002
SCATTERING ANGLE

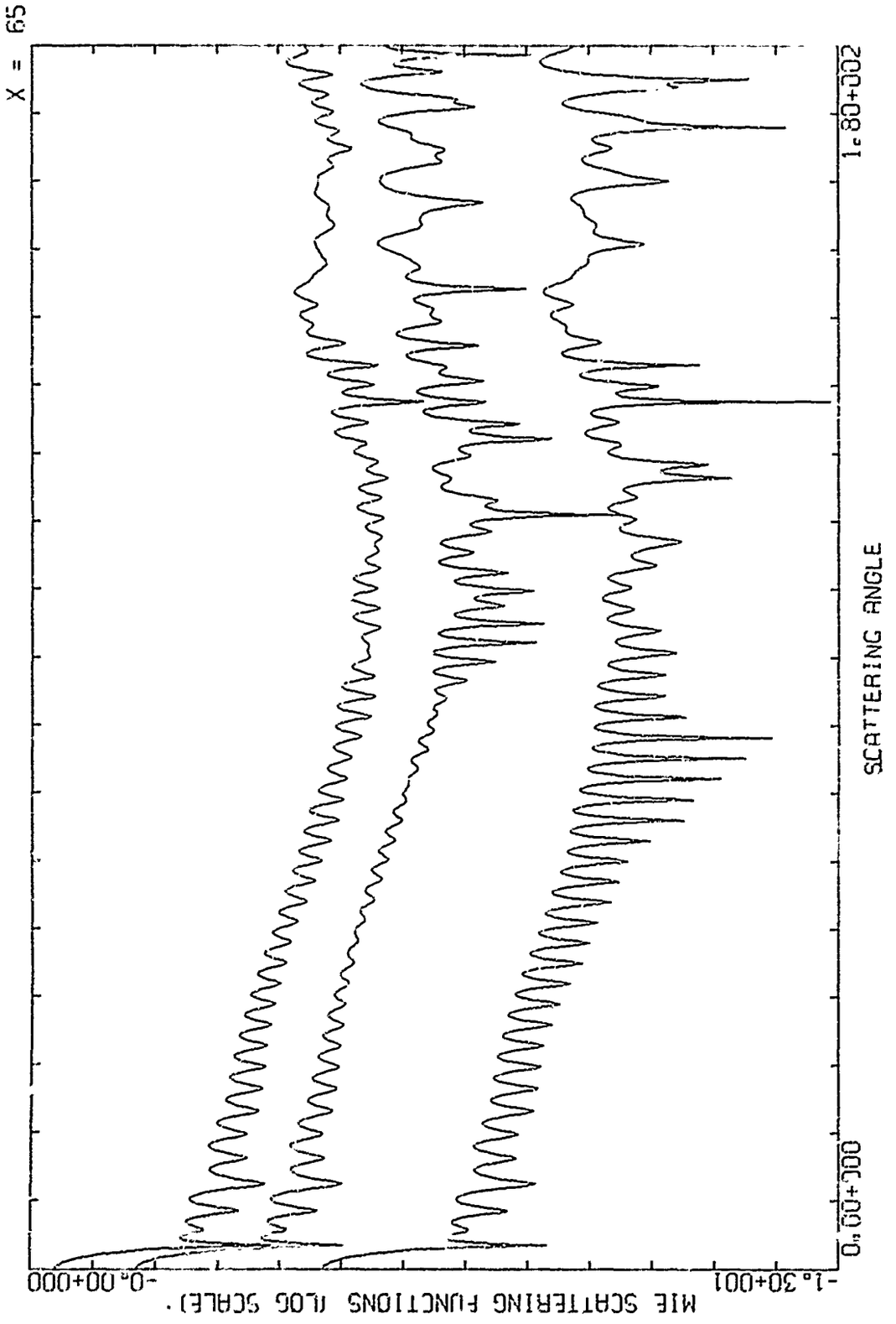

X = 94
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

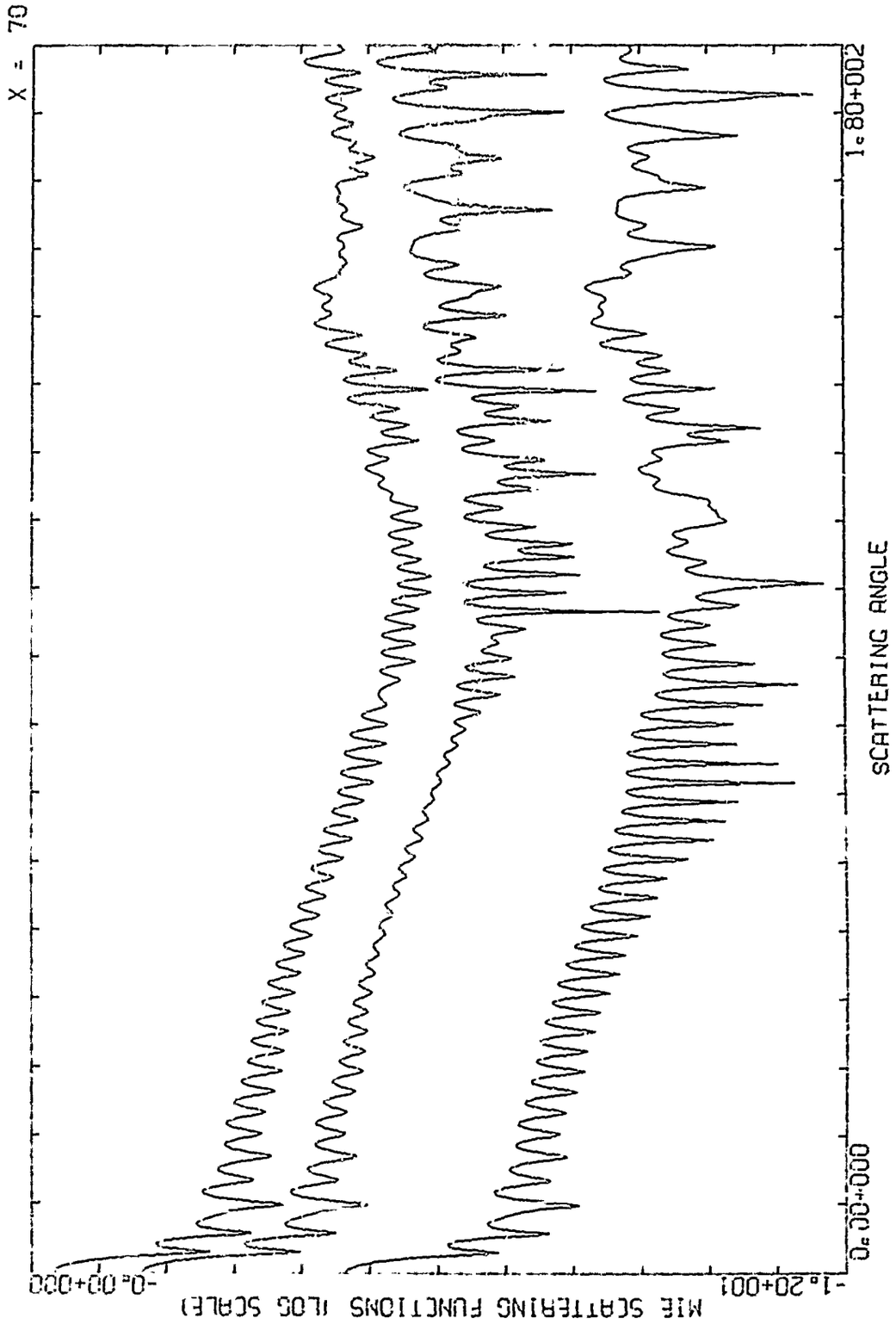

X = 84
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

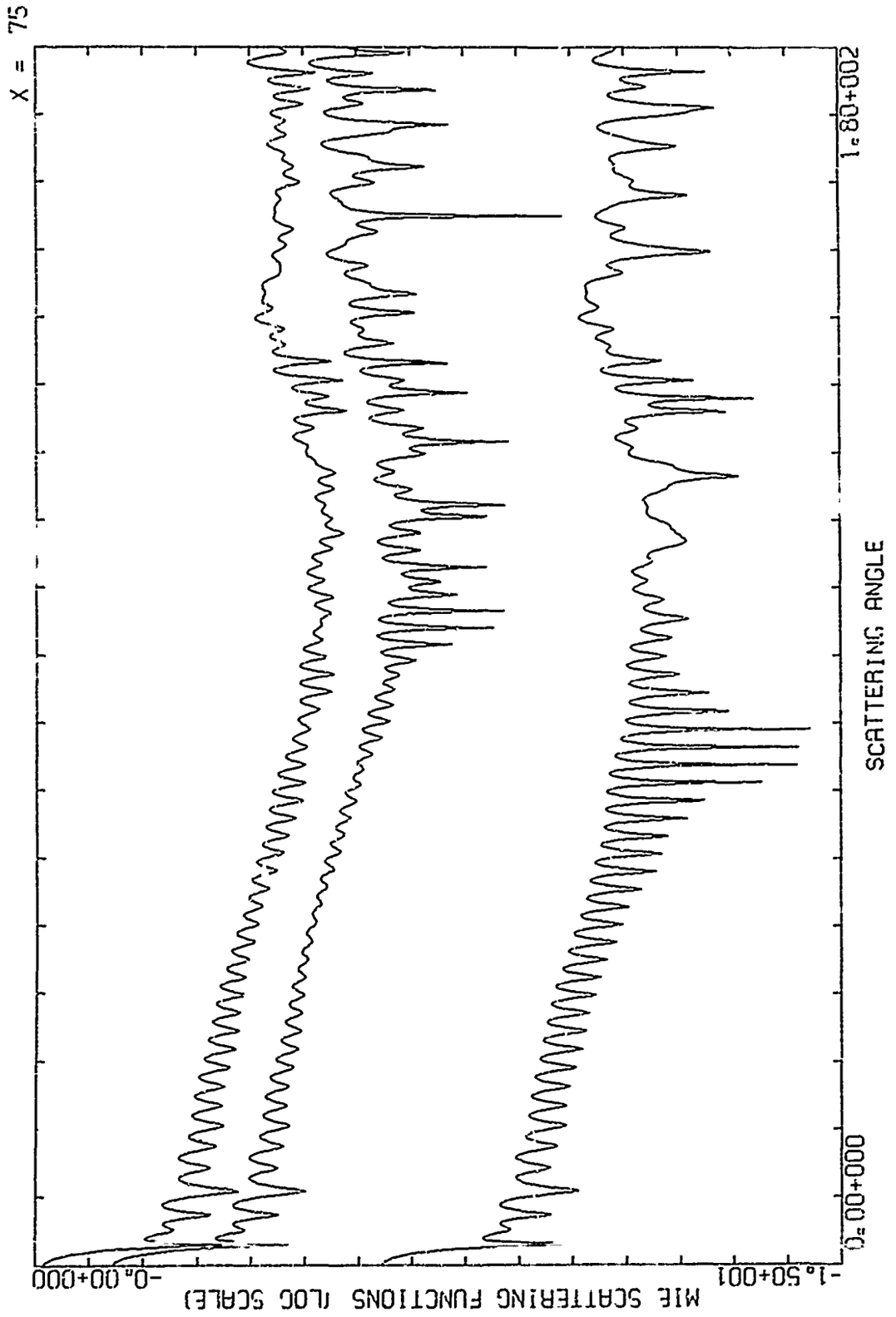

X = 50
0.00+000
1.80+002
SCATTERING ANGLE
-1.40+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

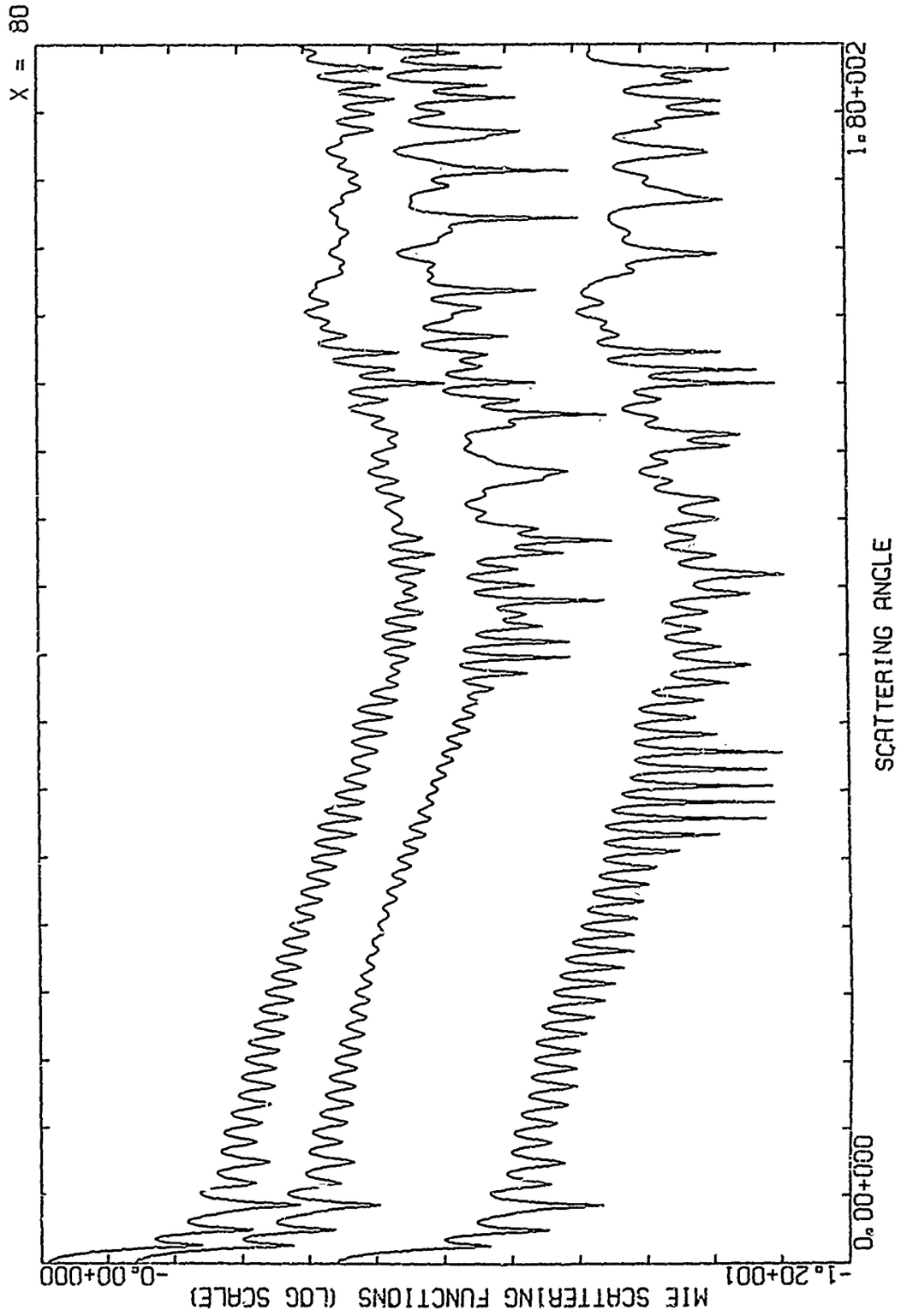

X = 55
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

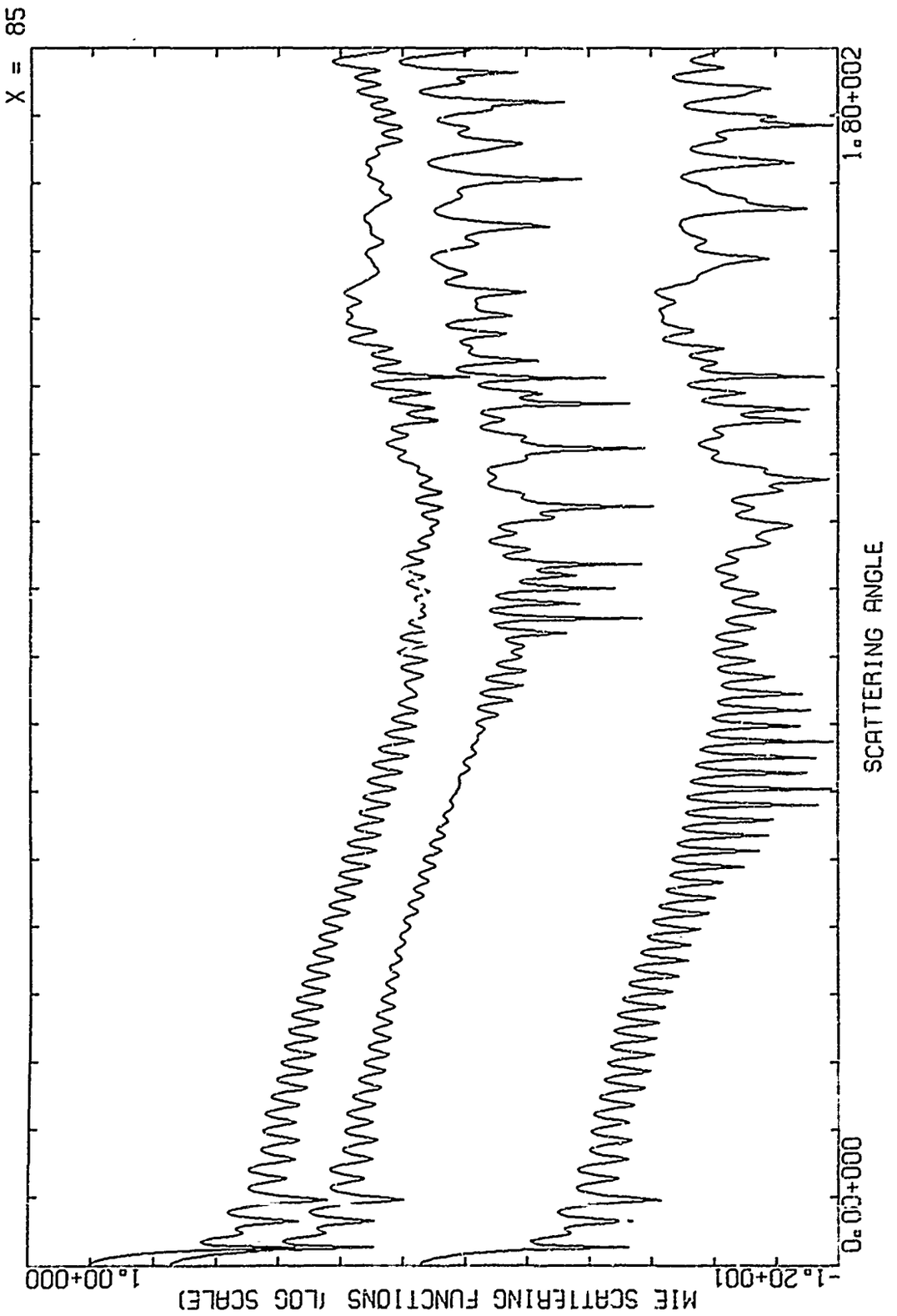

X = 60
-0.00+000
-1.20+001
MIE SCATTERING FUNCTIONS (LOG SCALE)
0.00+000
1.80+002
SCATTERING ANGLE

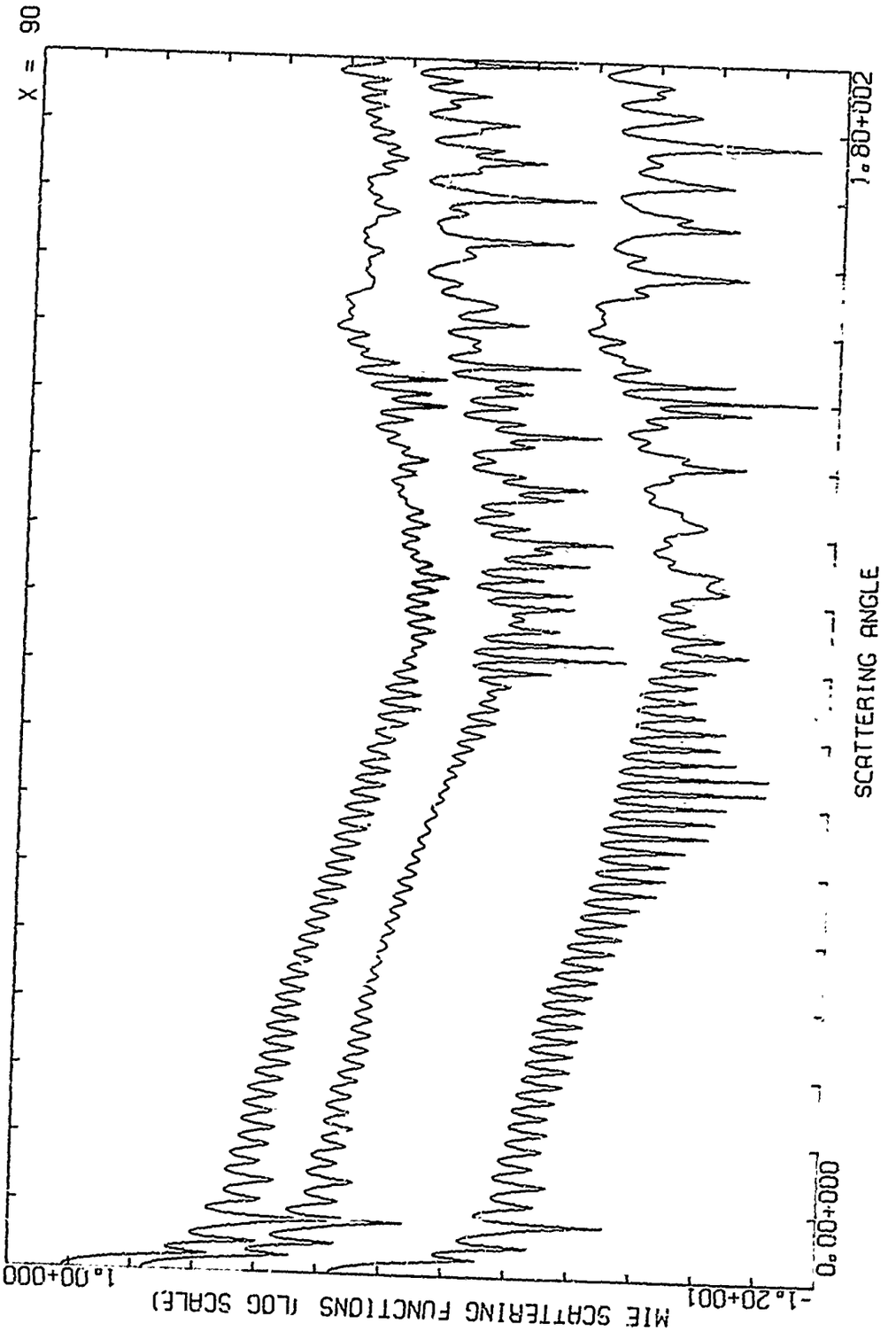

X = 65
0.00+000
1.80+002
SCATTERING ANGLE
-0.00+000
-1.30+001
MIE SCATTERING FUNCTIONS (LOG SCALE).

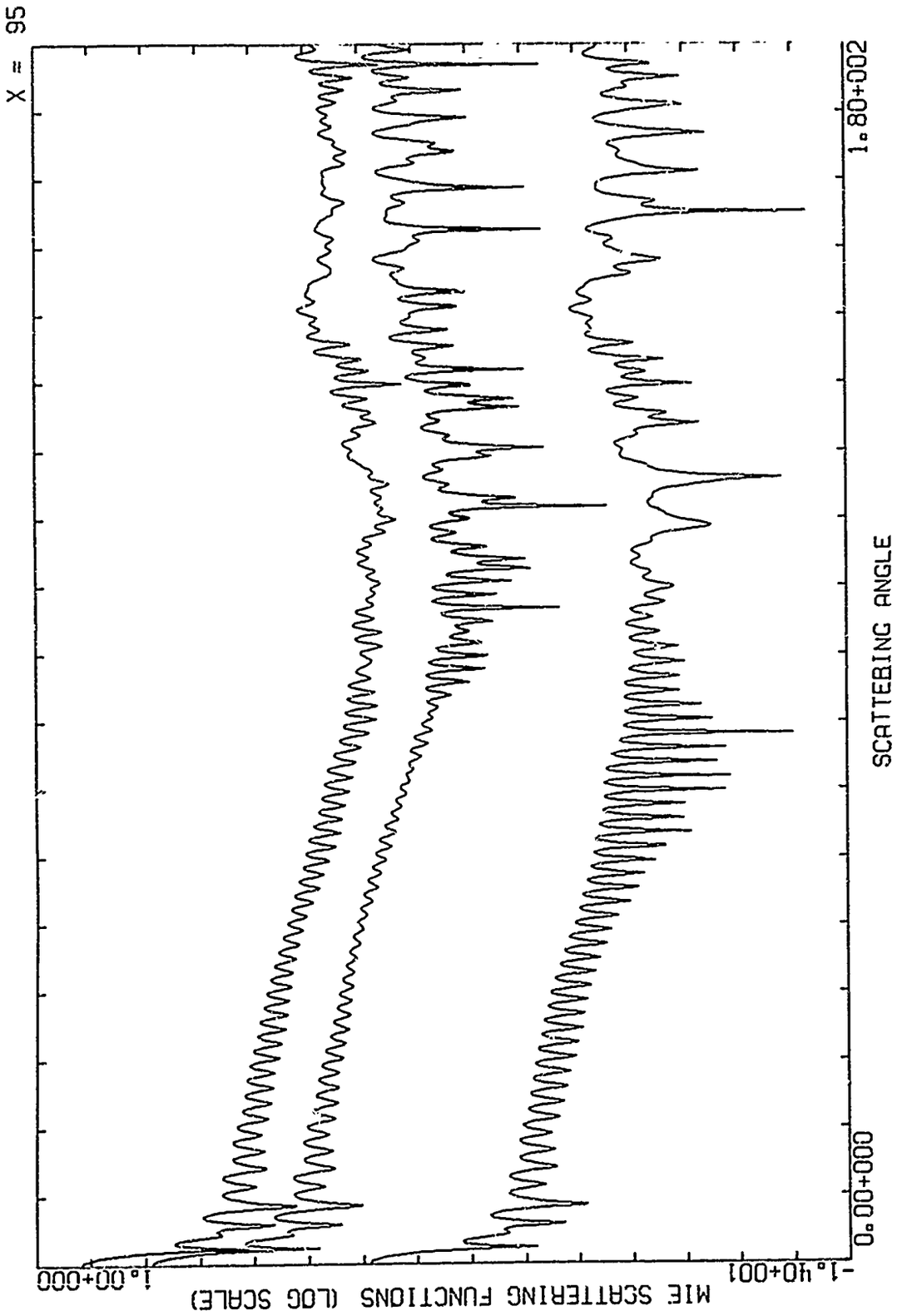

X = 70
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

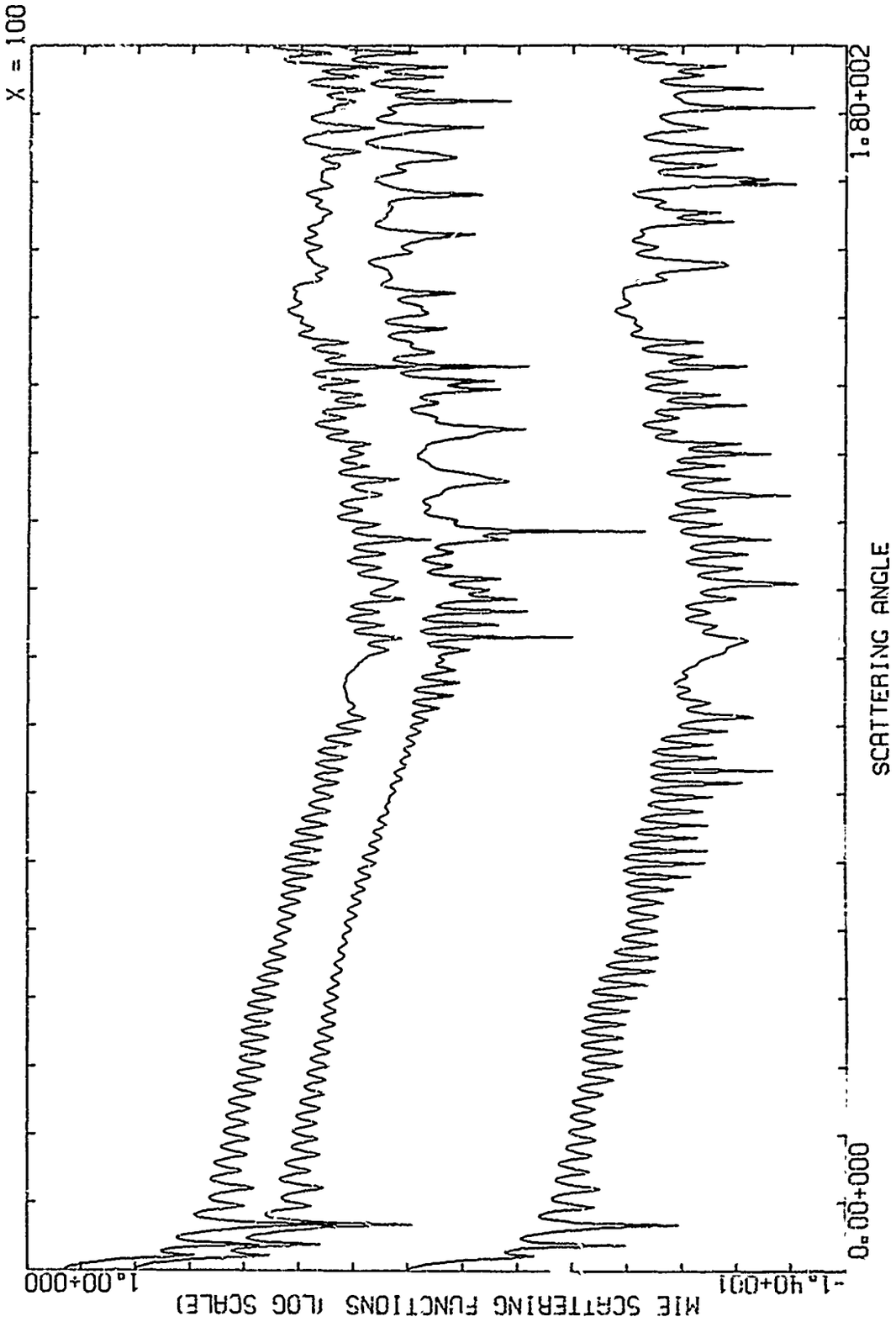

X = 75
0.00+000
1.80+002
SCATTERING ANGLE
-1.50+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

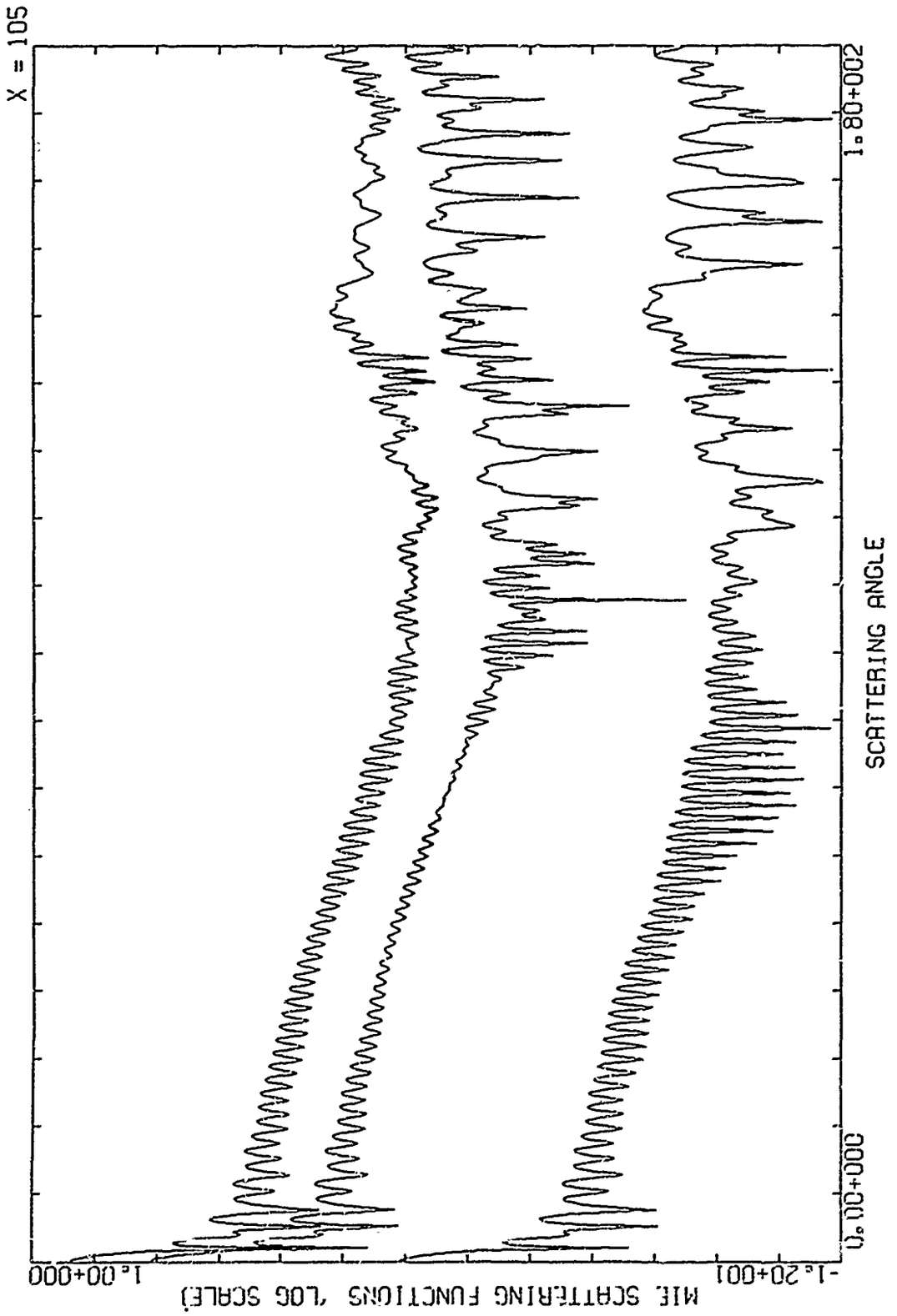

X = 80
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
-0.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

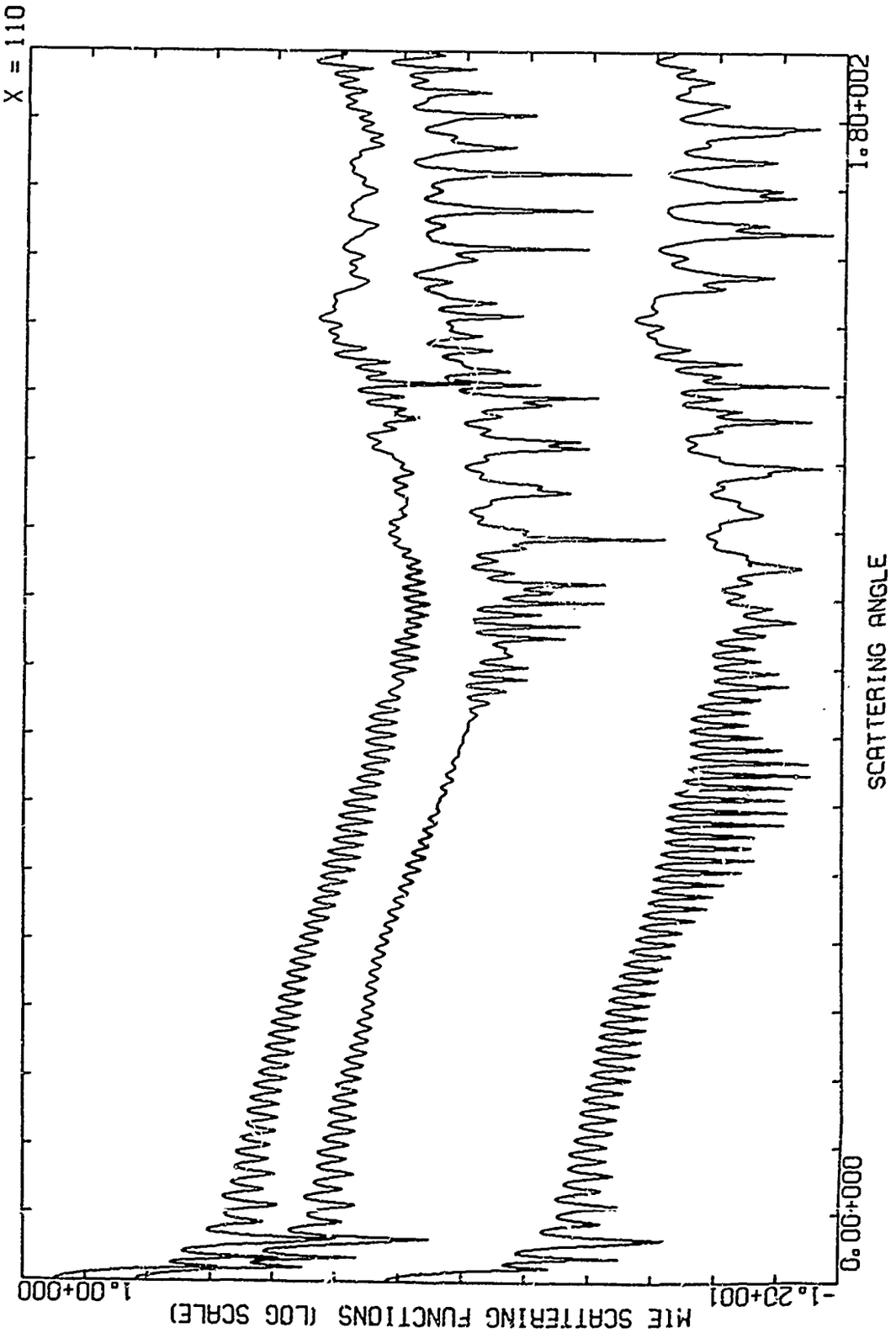

X = 85
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)

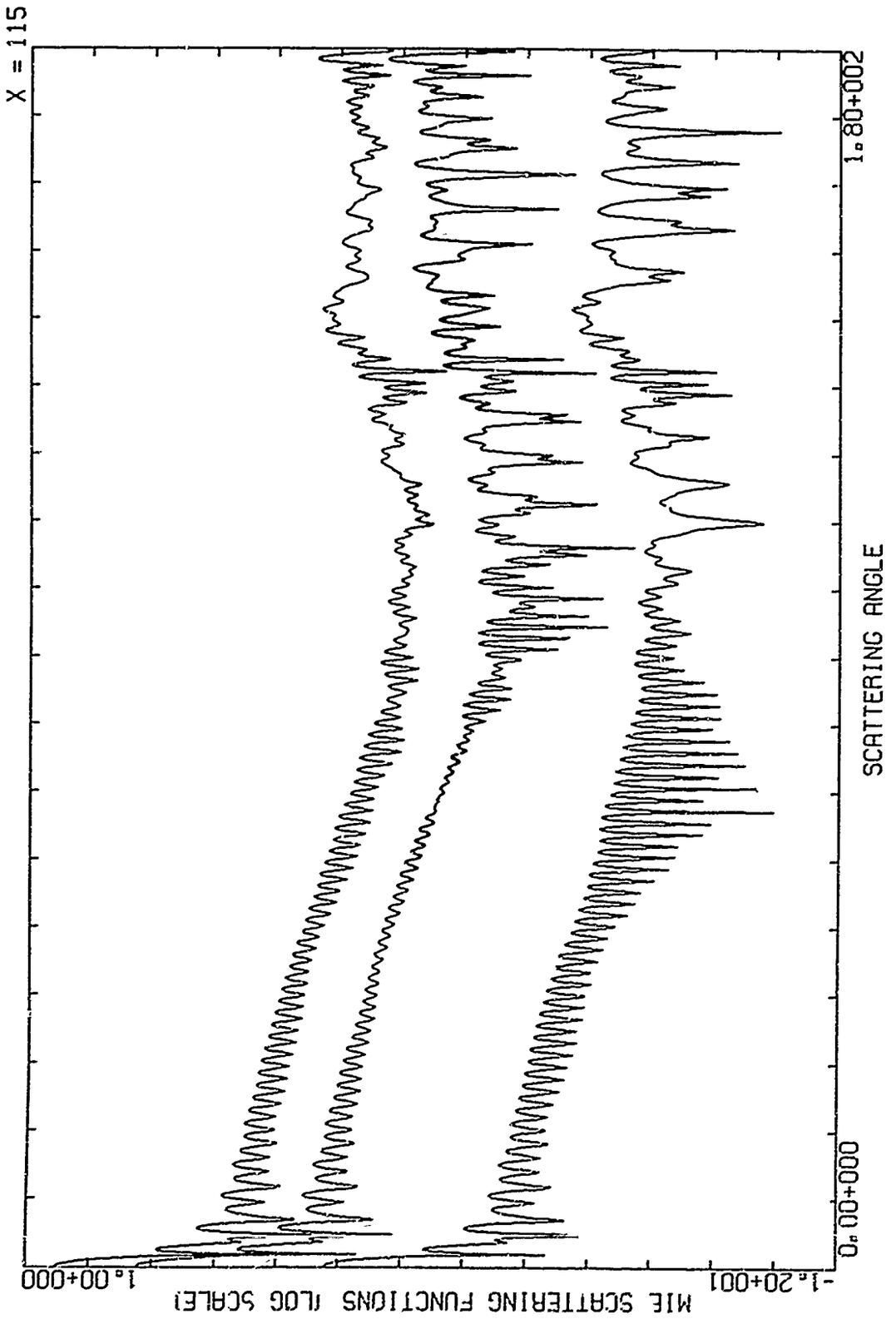

X = 90
1.80+002
SCATTERING ANGLE
0.00+000
1.00+000
-1.20+001
MIE SCATTERING FUNCTIONS (LOG SCALE)

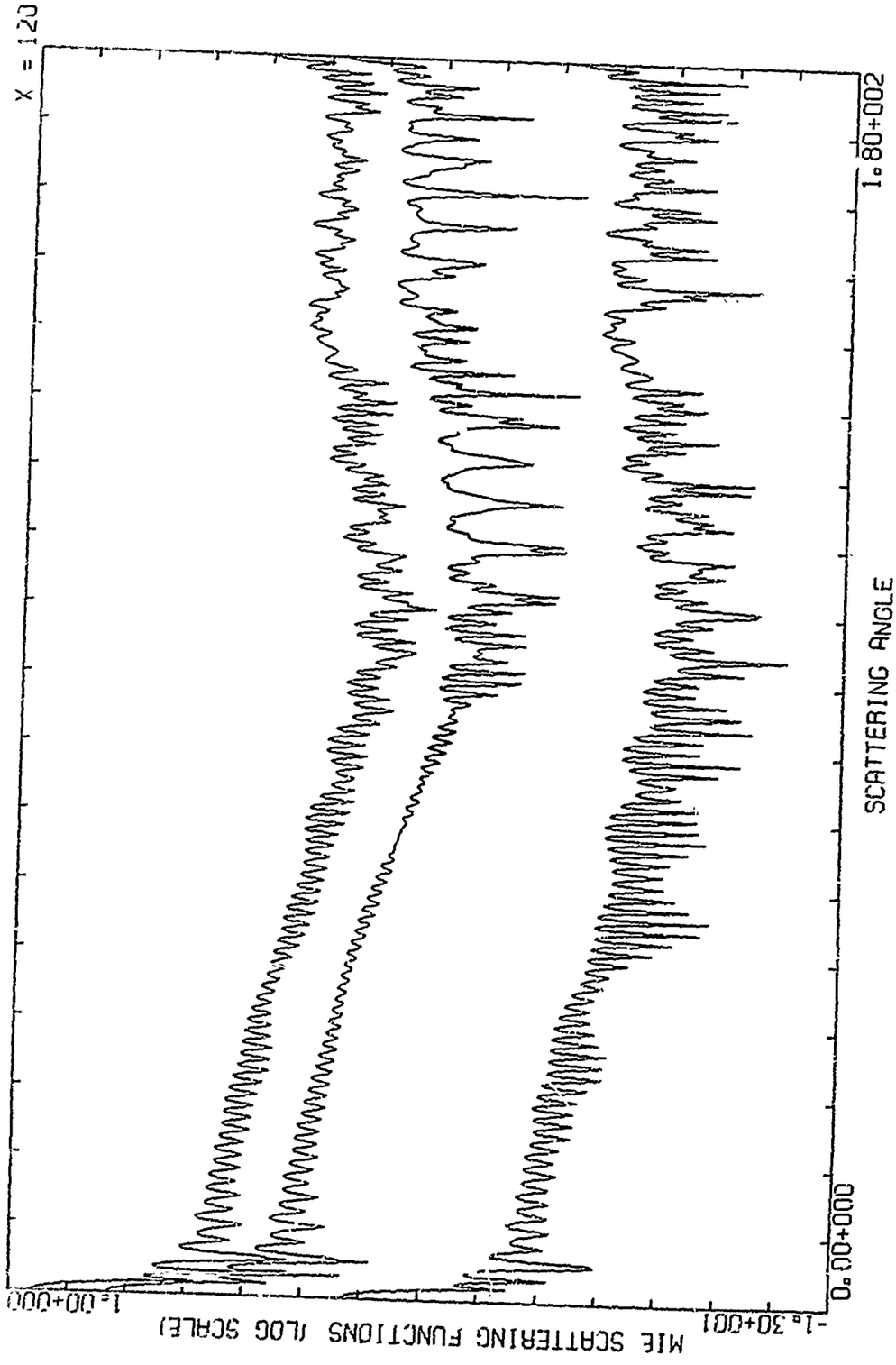

X = 95
1.80+002
SCATTERING ANGLE
0.00+000
1.00+000
-1.40+001
MIE SCATTERING FUNCTIONS (LOG SCALE)

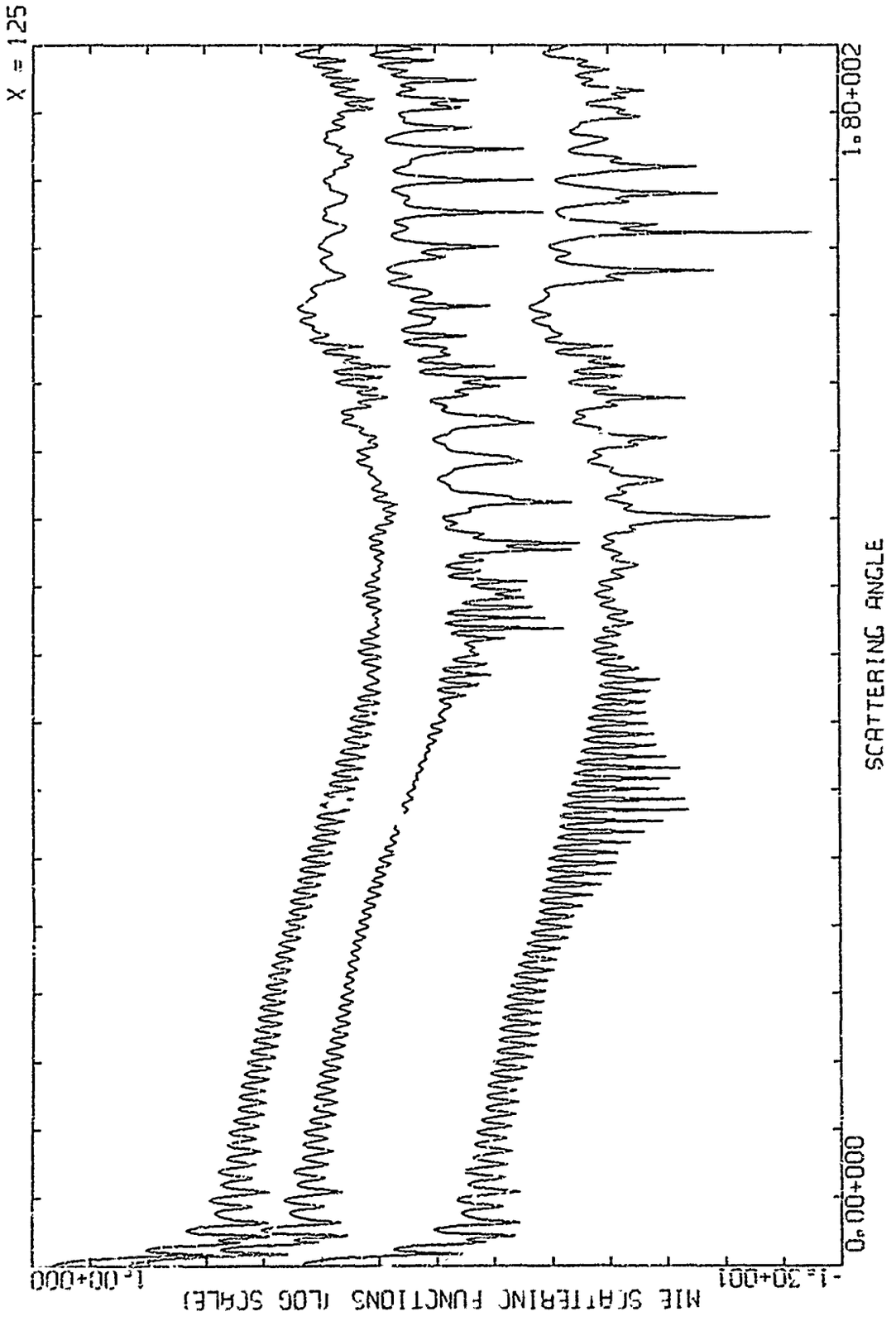

X = 100
1.00+000
-1.40+001
MIE SCATTERING FUNCTIONS (LOG SCALE)
0.00+000
1.80+002
SCATTERING ANGLE


X = 105
1.00+000
-1.20+001
MIE SCATTERING FUNCTIONS (LOG SCALE)
0.00+000
1.80+002
SCATTERING ANGLE


X = 110
1.00+000
-1.20+001
MIE SCATTERING FUNCTIONS (LOG SCALE)
0.00+000
1.80+002
SCATTERING ANGLE


X = 115
0.00+000
1.80+002
SCATTERING ANGLE
-1.20+001
1.00+000
MIE SCATTERING FUNCTIONS (LOG SCALE)


X = 120
1.80+002
SCATTERING ANGLE
0.00+000
-1.30+001
MIE SCATTERING FUNCTIONS (LOG SCALE)
1.00+000


X = 125
0.00+000
1.80+002
SCATTERING ANGLE
1.00+000
-1.30+001
MIE SCATTERING FUNCTIONS (LOG SCALE)

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ANGULAR SCATTERING FUNCTIONS FOR SPHERICAL WATER DROPLETS

4 DESCRIPTIVE NOTES (Type of report and inclusive dates)

This report completes one phase of the problem; work is continuing on other phases.

5 AUTHOR(S) (First name, middle initial, last name)

H.B. Howell

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13 ABSTRACT

Tables and graphs are presented which give the angular distribution of scattered light from spherical particles having a refractive index 1.33 (e.g., water droplets in air). The 50 particle sizes include the size parameters 1(1)20, 22(2)50, 55(5)125, and the scattering angles $0^\circ(0.2^\circ)180^\circ$ in the graphs and $0^\circ(2^\circ)180^\circ$ in the tables. The computational procedure is given in detail, and the FORTRAN programs are listed.

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Mie scattering						
Water droplets, light scattering from						
Light scattering diagrams						

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