

LAB COPY

PRELIMINARY COMPARISON OF WILA JAWIRA PROJECT CROP REMAINS:

TIWANAKU, LUKURMATA, AND VALLEY SURVEY SITES

HEIDI A. LENNSTROM

MARCH, 1991

ARCHAEOBOTANY LAB REPORT 20

UNIVERSITY OF MINNESOTA

DEPARTMENT OF ANTHROPOLOGY

MINNEAPOLIS, MN 55455

Summary crop ubiquities for Wila Jawira dataset 1986-90

	Maize	Tubers	ALL SAMPLES TOGETHER		Legumes	
			Lrg Cheno	Sml Cheno		
LKM						
1986-87	13.2%	2.2%	47.1%	82.4%	0.7%	
n=136	(18)	(3)	(64)	(112)	(1)	
TIW-AKE	29.3% (79)	8.5% (23)	50% (135)	96.3% (260)	1.1% (3)	TIW TOTAL n=271
1988-9	25.1%	6.0%	38.8%	94.5%	1.1%	
n=183	(44)	(11)	(71)	(173)	(2)	
TIW-AK						
Sup.N.	20%	46.7%	26.7%	100%	0%	
n=15	(3)	(7)	(4)	(15)		
TIW						
Putuni	50%	0%	75%	100%	0%	
n=4	(2)		(3)	(4)		
TIW-AKE2						
1990	40.0%	5.0%	95%	100%	5.0%	
n=20	(8)	(1)	(19)	(20)	(1)	
TIW-C.J.						
1990	76.9%	15.4%	84.6%	100%	0%	
n=13	(10)	(2)	(11)	(13)		
TIW-KK	34%	6%	77%	100%	0%	150 plots 110 floated 73 w/ff did 35 — 48%
1990	36.4%	9.1%	100%	100%	0%	
n=35	(4)	(1)	(11)	(11)		
TMV79	0%	7.1%	57.1%	92.9%	0%	
n=14		(1)	(8)	(13)		
TMV558	7.7%	0%	53.8%	100%	0%	
n=13	(1)		(7)	(13)		
ALLK	0%	0%	27.7%	100%	0%	
n=11			(3)	(11)		
GUAQ	14.3%	0%	28.6%	78.6%	0%	
n=14	(2)		(4)	(11)		
IWAWE	0%	0%	20%	90%	0%	
n=10			(2)	(9)		
OBSIDIANA	0%	25%	16.6%	91.7%	0%	
n=12		(3)	(2)	(11)		
PUKARA						
n=6	0%	0%	0%	16.7%	0%	
	(3) 3.5%	(4) 5%	(26) 32.5%	(69) 86.3%	0	VALLEY TOTAL n=80

Sample sizes for flotation samples (in liters), 1986-1990:

	N	mean	s.d.	median	mode	range
Lukurmata 1986-87	136	1.5	0.76	1.6	0.3	0.3 to 4.4
Tiwanaku-AKE 1988-9	183	5.4	1.67	6.3	6.3	0.3 to 6.3
Tiwanaku-AK Sup.North.	15	4.9	1.40	5.7	5.7	1.9 to 6.3
Tiwanaku-Putuni 1989	4	6.3	0.0	6.3	6.3	all 6.3
Tiwanaku-AKE2 1990	20	7.2	0.87	7.2	8.0	5.0 to 8.0
Tiwanaku-Chiji Jawira	13	5.7	2.13	6.4	5.6	1.0 to 8.0
Tiwanaku-KK	11	7.0	1.49	7.2	5.0	5.0 to 9.6
TMV79	14	4.8	1.82	5.7	2.3	2.3 to 6.3
TMV558	13	3.4	1.70	5.7	6.3	2.3 to 6.3
ALLK	11	5.1	0.38	5.2	5.0	4.4 to 5.7
Guaqui	14	1.6	0.38	1.6	1.3	1.0 to 2.3
Iwawe	10	1.1	0.33	1.0	1.0	0.8 to 1.8
Obsidiana	12	1.8	0.42	2.0	2.1	1.3 to 2.3
Pukara	6	1.7	0.32	1.6	1.6	1.3 to 2.1

FEATURES

	Maize	Tubers	Lrg Cheno	Sml Cheno	Legumes
LKM 1986-87 n=65	16.9% (11)	1.5% (1)	55.4% (36)	87.7% (57)	0%
TIW-AKE 1988-9 n=44	43.2% (19)	13.6% (6)	52.3% (23)	95.5% (42)	4.6% (2)
TIW-AK Sup.N. n=15	20.0% (3)	46.7% (7)	26.7% (4)	100% (15)	0%
TIW Putuni n=3	66.7% (2)	0%	100% (3)	100% (3)	0%
TIW-AKE2 1990 n=4	75% (3)	0%	75% (3)	100% (4)	0%
TIW-C.J. 1990 n=9	66.7% (6)	11.1% (1)	88.9% (8)	100% (9)	0%
TIW-KK 1990 n=3	33.3% (1)	0%	100% (3)	100% (3)	0%
TMV79 n=4	0%	25% (1)	75% (3)	100% (4)	0%
TMV558 n=9	11.1% (1)	0%	44.4% (4)	100% (9)	0%
ALLK n=2	0%	0%	0%	100% (2)	0%
GUAQ n=9	11.1% (1)	0%	44.4% (4)	66.7% (6)	0%
IWAVE n=5	0%	0%	40.0% (2)	100% (5)	0%
OBSIDIANA n=9	0%	33.3% (3)	22.2% (2)	100% (9)	0%
PUKARA n=2	0%	0%	0%	50% (1)	0%

NON-FEATURES

	Maize	Tubers	Lrg Chenop	Sml Chenop	Legumes
LKM					
1986-87	9.9%	2.8%	39.4%	77.5%	1.4%
n=71	(7)	(2)	(28)	(55)	(1)
TIW-AKE					
1988-9	18.0%	3.6%	34.5%	94.2%	0%
n=139	(25)	(5)	(48)	(131)	
TIW-AK Sup.N. n=0					
TIW Putuni n=1	0%	0%	0%	100%	0%
				(1)	
TIW-AKE2					
1990	31.3%	6.3%	100%	100%	6.3%
n=16	(5)	(1)	(16)	(16)	(1)
TIW-C.J.					
1990	100%	25%	75.0%	100%	0%
n=4	(4)	(1)	(3)	(4)	
TIW-KK					
1990	37.5%	12.5%	100%	100%	0%
n=8	(3)	(1)	(8)	(8)	
TMV79	0%	0%	50%	90%	0%
n=10			(5)	(9)	
TMV558	0%	0%	75%	100%	0%
n=4			(3)	(4)	
ALLK	0%	0%	33.3%	100%	0%
n=9			(3)	(9)	
GUAQ	20.0%	0%	0%	100%	0%
n=5	(1)			(5)	
IWAWE	0%	0%	0%	80%	0%
n=5				(4)	
OBSIDIANA	0%	0%	0%	66.7%	0%
n=3				(2)	
PUKARA					
n=4	0%	0%	0%	0%	0%

Summary crop densities for Wila Jawira dataset 1986-90
 # fragments/ liter of floted site matrix

	Maize	Tubers	Lrg Cheno	Sml Cheno	Legumes
LKM 1986-87 n=136	0.24	0.03	2.82	59.36	<0.01
TIW-AKE 1988-9 n=183	0.34 0.29	0.05 0.02	0.76 0.31	15.76 11.00	<0.01 <0.01
TIW-AK Sup.N. n=15	0.09	0.56	0.09	2.60	0.00
TIW Putuni n=4	0.28	0.00	0.56	7.30	0.00
TIW-AKE2 1990 n=20	1.10	0.02	1.30	28.00	<0.01
TIW-C.J. 1990 n= 13 14	0.37 1.34	0.04 0.03	7.00 6.49	78.00 73.28	0.00
TIW-KK 1990 n= 11 35	0.23 0.25	0.01	0.55 1.83	9.70 17.27	0.00
TMV79 n=14	0.00	0.03	0.07	370.00	0.00
TMV558 n=13	0.03	0.00	0.68	10.00	0.00
ALLK n=11	0.00	0.00	0.13	30.40	0.00
GUAQ n=14	0.90	0.00	0.73	9.36	0.00
IWAWE n=10	0.00	0.00	0.29	4.04	0.00
OBSIDIANA n=12	0.0	0.13	0.18	49.01	0.00
PUKARA n=6	0.00	0.00	0.00	0.71	0.00
	0.16	0.02	0.33	80.10	0.0

TIW TOTAL

FORM

n/s

Emp. Pacajes

VALLEY
SITES
TOTAL

FEATURES (DENSITIES)

	Maize	Tubers	Lrg Cheno	Sml Cheno	Legumes
LKM 1986-87 n=65	0.43	0.03	4.98	73.91	0.00
TIW-AKE 1988-9 n=44	1.09	0.07	0.84	33.40	0.01
TIW-AK Sup.N. n=15	0.09	0.56	0.09	2.61	0.00
TIW Putuni n=3	0.37	0.00	0.74	8.73	0.00
TIW-AKE2 1990 n=4	5.36	0.00	2.05	49.29	0.00
TIW-C.J. 1990 n=9	0.43	0.02	9.51	97.66	0.00
TIW-KK 1990 n=3	1.57	0.00	1.75	26.13	0.00
TMV79 n=4	0.00	0.11	0.75	<u>886.19</u>	0.00
TMV558 n=9	0.05	0.00	0.86	11.21	0.00
ALLK n=2	0.00	0.00	0.00	3.10	0.00
GUAQ n=9	1.17	0.00	1.14	11.40	0.00
IWAWE n=5	0.00	0.00	0.33	4.73	0.00
OBSIDIANA n=9	0.00	0.17	0.24	65.14	0.00
PUKARA n=2	0.00	0.00	0.00	2.14	0.00

NON-FEATURES (DENSITIES)

	Maize	Tubers	Lrg Chenop	Sml Chenop	Legumes
LKM 1986-87 n=71	0.07	0.03	0.84	46.04	0.01
TIW-AKE 1988-9 n=139	0.04	0.01	0.14	4.34	0.00
TIW-AK Sup.N. n=0					
TIW Putuni n=1	0.00	0.00	0.00	3.17 (1)	0.00
TIW-AKE2 1990 n=16	0.09	0.02	1.11	22.97	0.01
TIW-C.J. 1990 n=4	0.22	0.07	1.33	25.22	0.00
TIW-KK 1990 n=8	0.13	0.03	1.07	20.38	0.00
TMV79 n=10	0.00	0.00	0.69	<u>75.22</u>	0.00
TMV558 n=4	0.00	0.00	0.25	7.68	0.00
ALLK n=9	0.00	0.00	0.16	3.03	0.00
GUAQ n=5	0.40	0.00	0.00	5.70	0.00
IWAWE n=5	0.00	0.00	0.25	3.36	0.00
OBSIDIANA n=3	0.00	0.00	0.00	0.63	0.00
PUKARA n=4	0.00	0.00	0.00	0.00	0.00

*highly
localized
one sample*

CORRELATION BETWEEN FLOT SAMPLE SIZE AND UBIQUITY, AND BETWEEN SAMPLE SIZE AND DENSITY

CORRELATION OF SAMPLE SIZE AND UBIQUITY

Maize	$R_s=+0.71$ ($p=0.0046$)
Tubers	$R_s=+0.33$ ($p=0.2432$)
Lrg Cheno	$R_s=+0.71$ ($p=0.0041$)
Sml Cheno	$R_s=+0.81$ ($p=0.0004$)
Legumes	$R_s=+0.22$ ($p=0.4430$)

CORRELATION BETWEEN SAMPLE SIZE AND DENSITIES

Maize	$R_s=+0.46$ ($p=0.1010$)
Tubers	$R_s=+0.30$ ($p=0.3034$)
Lrg Cheno	$R_s=+0.23$ ($p=0.4223$)
Sml Cheno	$R_s=+0.27$ ($p=0.3535$)
Legumes	$R_s=+0.15$ ($p=0.6060$)

SITE=LKM YEAR=86

UNIVARIATE

VARIABLE=ITEMS

*Descriptive
 Statistics
 of # of 'ITEMS'
 Per Sample*

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
N	47	1881	99%	1881	
MEAN	170.936	182	95%	941.4	LOWEST
STD DEV	336.166	34	90%	508	0
SKENNESS	3.59114	1	10%	0	0
USS	6571662	0	5%	0	0
CV	196.662		1%	0	0
T:MEAN=0	3.48601	1881		0	0
SGN RANK	370.5	181			
NUM == 0	38	0			

LUKURMATA

1986-87

(x bag size = 1.5l)

SITE=LKM YEAR=87

UNIVARIATE

VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
N	84	5095	99%	5095	
MEAN	649.798	657.75	95%	3573.75	LOWEST
STD DEV	1039.77	236	90%	2029	0
SKENNESS	2.57527	55.5	10%	11	0
USS	125201199	0	5%	2.5	1
CV	160.015		1%	0	2
T:MEAN=0	5.7277	5095			4
SGN RANK	1701.5	602.25			
NUM == 0	82	0			

*Descriptive
 statistics of
 # of 'ITEMS'
 per sample*

*TIWANAKU
 1988-89
 (Y bag size=5.7f)*

<table border="0"> <tr><td>*N</td><td>25</td></tr> <tr><td>MEAN</td><td>420.92</td></tr> <tr><td>STD DEV</td><td>1751.8</td></tr> <tr><td>SKENNESS</td><td>4.96869</td></tr> <tr><td>USS</td><td>78080653</td></tr> <tr><td>CV</td><td>416.184</td></tr> <tr><td>T:MEAN=0</td><td>1.20139</td></tr> <tr><td>SGN RANK</td><td>138</td></tr> <tr><td>NUM == 0</td><td>23</td></tr> </table>	*N	25	MEAN	420.92	STD DEV	1751.8	SKENNESS	4.96869	USS	78080653	CV	416.184	T:MEAN=0	1.20139	SGN RANK	138	NUM == 0	23	<table border="0"> <tr><td colspan="2">MOMENTS</td></tr> <tr><td>25 SUM MGTS</td><td>10523</td></tr> <tr><td>SUM</td><td>3068805</td></tr> <tr><td>VARIANCE</td><td>24.7775</td></tr> <tr><td>KURTOSIS</td><td>73651312</td></tr> <tr><td>CSS</td><td>350.36</td></tr> <tr><td>STD MEAN</td><td>0.241321</td></tr> <tr><td>PROB> T </td><td>0.0001</td></tr> <tr><td>PROB> S </td><td>0</td></tr> <tr><td>23</td><td></td></tr> </table>	MOMENTS		25 SUM MGTS	10523	SUM	3068805	VARIANCE	24.7775	KURTOSIS	73651312	CSS	350.36	STD MEAN	0.241321	PROB> T	0.0001	PROB> S	0	23		<table border="0"> <tr><td colspan="3">QUANTILES(DEF=4)</td></tr> <tr><td>8813</td><td>99%</td><td>8813</td></tr> <tr><td>102</td><td>95%</td><td>6317.9</td></tr> <tr><td>31</td><td>90%</td><td>381.4</td></tr> <tr><td>17.5</td><td>10%</td><td>1.8</td></tr> <tr><td>0</td><td>5%</td><td>0</td></tr> <tr><td></td><td>1%</td><td>0</td></tr> <tr><td>8813</td><td></td><td></td></tr> <tr><td>84.5</td><td></td><td></td></tr> <tr><td>0</td><td></td><td></td></tr> </table>	QUANTILES(DEF=4)			8813	99%	8813	102	95%	6317.9	31	90%	381.4	17.5	10%	1.8	0	5%	0		1%	0	8813			84.5			0			<table border="0"> <tr><td colspan="3">EXTREMES</td></tr> <tr><td>LOWEST</td><td></td><td>HIGHEST</td></tr> <tr><td>0</td><td></td><td>117</td></tr> <tr><td>0</td><td></td><td>148</td></tr> <tr><td>3</td><td></td><td>305</td></tr> <tr><td>4</td><td></td><td>496</td></tr> <tr><td>6</td><td></td><td>8813</td></tr> </table>	EXTREMES			LOWEST		HIGHEST	0		117	0		148	3		305	4		496	6		8813
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UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
		65	9%	LOWEST	HIGHEST
N	11	65	9%	65	65
MEAN	32.0909	353	75% Q3	11	30
STD DEV	15.8585	29	90%	16	39
SKEWNESS	0.870979	251.491	50% MED	21	39
USS	13843	0.534478	25% Q1	23	52
CV	49.4173	2514.91	0% MIN	28	65
T:MEAN=0	6.711146	4.78151	RANGE		
SGN RANK	33	0.0001	Q3-Q1		
NUM == 0	11	0.0038398	MODE		
SAS					

(x bag size = 5.1 l)

15:27 THURSDAY, APRIL 18, 1991 2

UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
		351	9%	LOWEST	HIGHEST
N	14	351	9%	351	351
MEAN	70.9286	59.5	75% Q3	7	43
STD DEV	116.173	24	90%	7	58
SKEWNESS	2.18205	9.75	50% Q1	9	64
USS	245881	0	25% Q1	10	332
CV	163.788	175449	0% MIN	19	351
T:MEAN=0	2.28445	31.0484	RANGE		
SGN RANK	45.5	0.0397897	Q3-Q1		
NUM == 0	13	49.75	MODE		
SAS		0			

(x bag size = 1.6 l)

15:27 THURSDAY, APRIL 18, 1991 3

UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
		78	9%	LOWEST	HIGHEST
N	9	78	9%	78	78
MEAN	27.2222	36	75% Q3	0	22
STD DEV	23.3333	22	90%	1	33
SKEWNESS	1.17611	9	50% Q1	17	35
USS	11025	0	25% Q1	22	37
CV	85.7143	7.77778	0% MIN	22	78
T:MEAN=0	3.5	0.00807908	RANGE		
SGN RANK	18	0.0141474	Q3-Q1		
NUM == 0	8	0	MODE		
SAS					

Descriptive Statistics of # of "ITEMS" per Sample

15:27 THURSDAY, APRIL 18, 1991 4

UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
		744	9%	LOWEST	HIGHEST
N	12	744	9%	744	744
MEAN	190.917	233.75	75% Q3	0	182
STD DEV	225.84	137	90%	2	224
SKEWNESS	1.66678	15.75	50% MED	15	237
USS	998429	0	25% Q1	18	510
CV	118.292	65.1943	0% MIN	85	744
T:MEAN=0	2.92843	0.013729	RANGE		
SGN RANK	33	0.00385729	Q3-Q1		
NUM == 0	11	218	MODE		
SAS		0			

1990-Juanis Sites (x brs = 1.8 l)

15:27 THURSDAY, APRIL 18, 1991 5

UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
		35	9%	LOWEST	HIGHEST
N	6	35	9%	35	35
MEAN	6.33333	9.5	75% Q3	0	0
STD DEV	14.0523	1	90%	0	1
SKEWNESS	2.44277	0	50% MED	1	1
USS	1228	0	25% Q1	1	1
CV	221.878	0	0% MIN	1	1
T:MEAN=0	1.10398	35	RANGE	1	35
SGN RANK	5	9.5	Q3-Q1		
NUM == 0	4	1	MODE		
SAS					

(x bag size = 1.7 l)

SAS

CUADRA=CJ Chiji Jamira

(x bag size = 5.7g)

UNIVARIATE

VARIABLE=ITEMS

MOMENTS

N	13	SUM MGTS	17396	99%	17396	EXTREMES	HIGHEST	17396
MEAN	2500.38	SUM	1828.5	95%	17396	LOWEST	50	1063
STD DEV	4834.14	VARIANCE	663	90%	13246		184	1517
SKENNESS	2.89368	KURTOSIS	348.5	10%	103.6		334	2140
USS	361702383	CSS	50	5%	50		363	7021
CV	193.336	STD MEAN	17346	1%	50		549	17396
T:MEAN=0	1.86491	PROB> T	1480					
SGN RANK	45.5	PROB> S	50					
NUM = 0	13	MODE						

QUANTILES(DEF=4)

99%	17396
95%	1828.5
90%	663
10%	348.5
5%	50
1%	50

Descriptive Statistics of # of "ITEMS" per sample

1990 Tiwanaku samples by Cuadra

CUADRA=AKE2

UNIVARIATE

VARIABLE=ITEMS

MOMENTS

N	21	SUM MGTS	7263	99%	7263	EXTREMES	HIGHEST	7263
MEAN	1139.33	SUM	1337	95%	6834.8	LOWEST	98	1360
STD DEV	1561.78	VARIANCE	617	90%	2773.8		131	1462
SKENNESS	3.34688	KURTOSIS	398	10%	134.8		150	1945
USS	76042802	CSS	98	5%	101.3		329	2981
CV	137.078	STD MEAN	7165	1%	98		370	7263
T:MEAN=0	3.34303	PROB> T	939					
SGN RANK	115.5	PROB> S	50					
NUM = 0	21	MODE						

QUANTILES(DEF=4)

99%	7263
95%	1337
90%	617
10%	398
5%	98
1%	98

(x bag size = 7.2g)

CUADRA=KKU

UNIVARIATE

VARIABLE=ITEMS

MOMENTS

N	11	SUM MGTS	1712	99%	1712	EXTREMES	HIGHEST	1712
MEAN	585	SUM	762	95%	1712	LOWEST	128	588
STD DEV	479.824	VARIANCE	391	90%	1602.2		180	623
SKENNESS	1.53221	KURTOSIS	251	10%	138.4		251	762
USS	6066781	CSS	128	5%	128		294	1163
CV	82.0211	STD MEAN	1584	1%	128		343	1712
T:MEAN=0	4.04362	PROB> T	511					
SGN RANK	33	PROB> S	128					
NUM = 0	11	MODE						

QUANTILES(DEF=4)

99%	1712
95%	762
90%	391
10%	251
5%	128
1%	128

(x bag size = 7.0g)

SITE=TIM (all 1990 TIWAAHAKU samples together)

UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
N	MEAN	17396	99%	LOWEST	HIGHEST
45	1397.02	17396	99%	50	2140
SUM	2844.4	1238.5	95%	98	2981
STD DEV	4.59656	603	90%	128	7021
SKENNESS	443811966	338.5	10%	131	7263
USS	203.604	50	5%	150	17396
CV	3.29472	17346	1%		
T:MEAN=0	517.5	900			
SGN RANK	PROB> S	MODE			
NUM == 0	45				

SAS
SITE=TIMA (558 r 79 together) = Jim's Survey sites

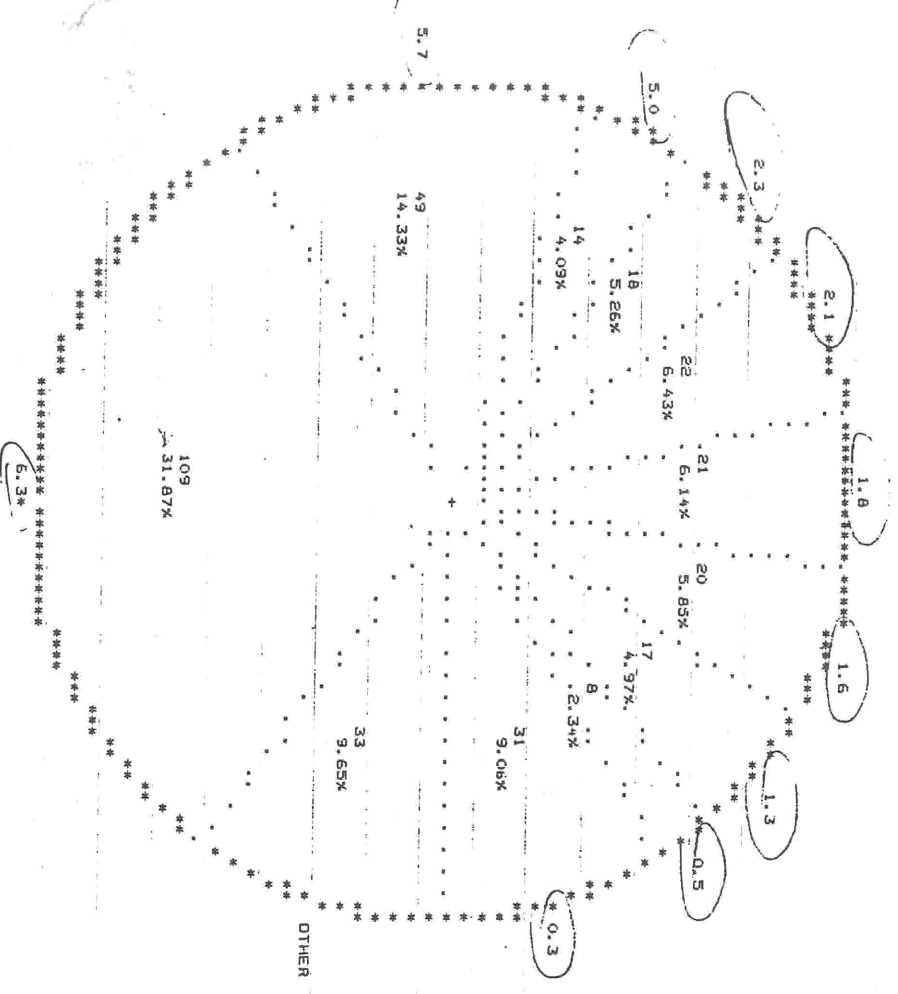
UNIVARIATE
VARIABLE=ITEMS

MOMENTS		QUANTILES(DEF=4)		EXTREMES	
N	MEAN	8101	99%	LOWEST	HIGHEST
27	609	8101	99%	0	333
SUM	1690.8	300	95%	7	388
STD DEV	3.98013	123	90%	10	668
SKENNESS	84342457	55	10%	44	4177
USS	277.635	0	5%	50	8101
CV	1.87158	8101	1%		
T:MEAN=0	175.5	245			
SGN RANK	PROB> S	MODE			
NUM == 0	26				

Descriptive
Statistics
of # of ITEMS
PER SAMPLE

1990 -
TIWAAHAKU

TMV 79 + 558
(together)



NOTE: THE PROCEDURE CHART USED 0.11 SECONDS AND 84K AND PRINTED PAGE 1.
 NOTE: SAS USED 212K MEMORY.

NOTE: SAS INSTITUTE INC.
 SAS CIRCLE
 PO BOX 8000
 CARY, N.C. 27512-8000

APPROXIMATE ACCUMULATED JOB COST, AT NORMAL UNIVERSITY RATES
 CPU CHARGES @ \$72.50 PER MINUTE..... \$0.84
 TAPE AND DISK IO CHARGES @ \$0.84 PER 1000 I/O'S..... \$0.49

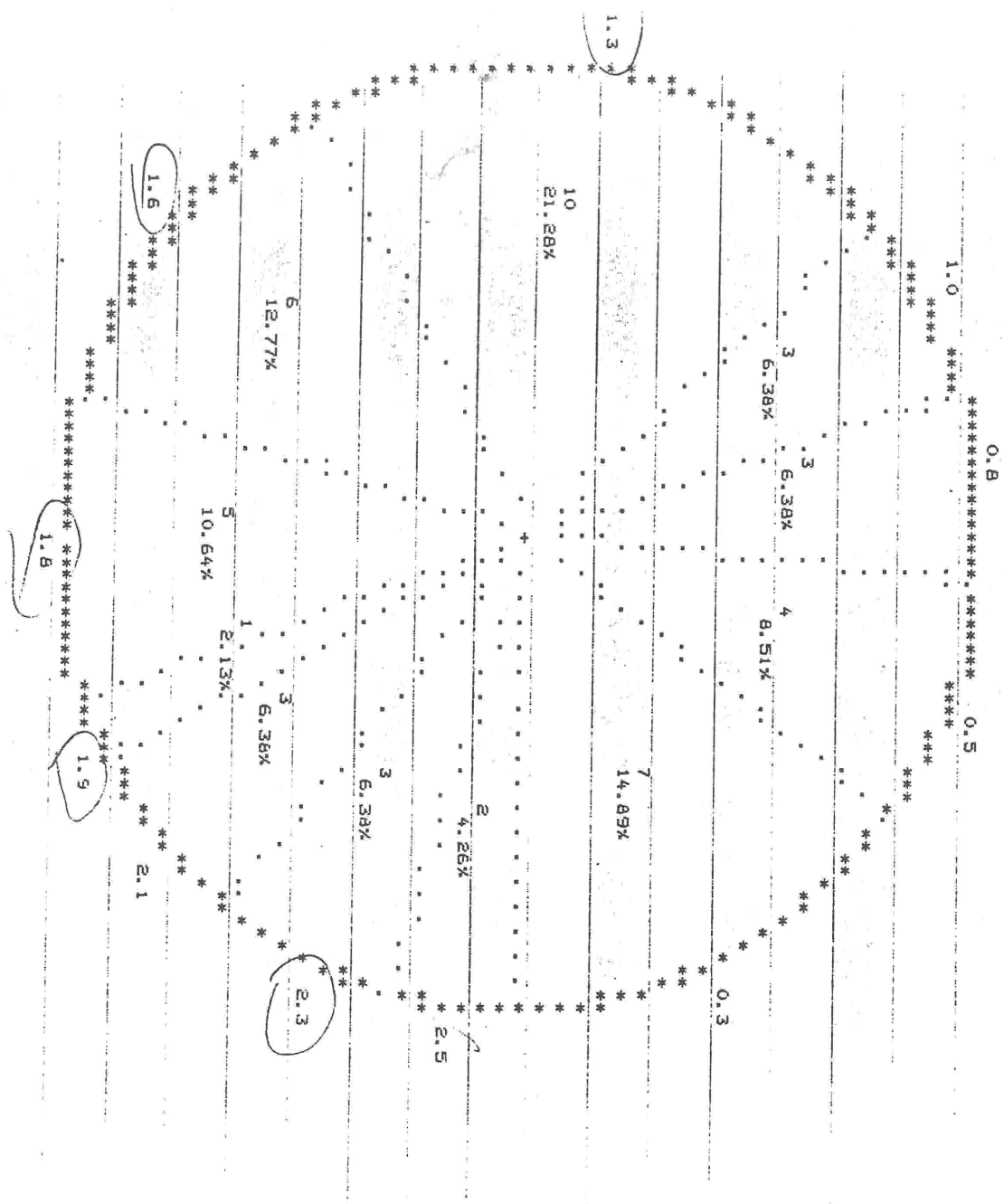
LKM+TIW
 1986-89
 all

BOLIVIAN I
 1987-89

3427

PIE CHART OF FLOTVOL

9:23 THURSDAY, APRIL 18,



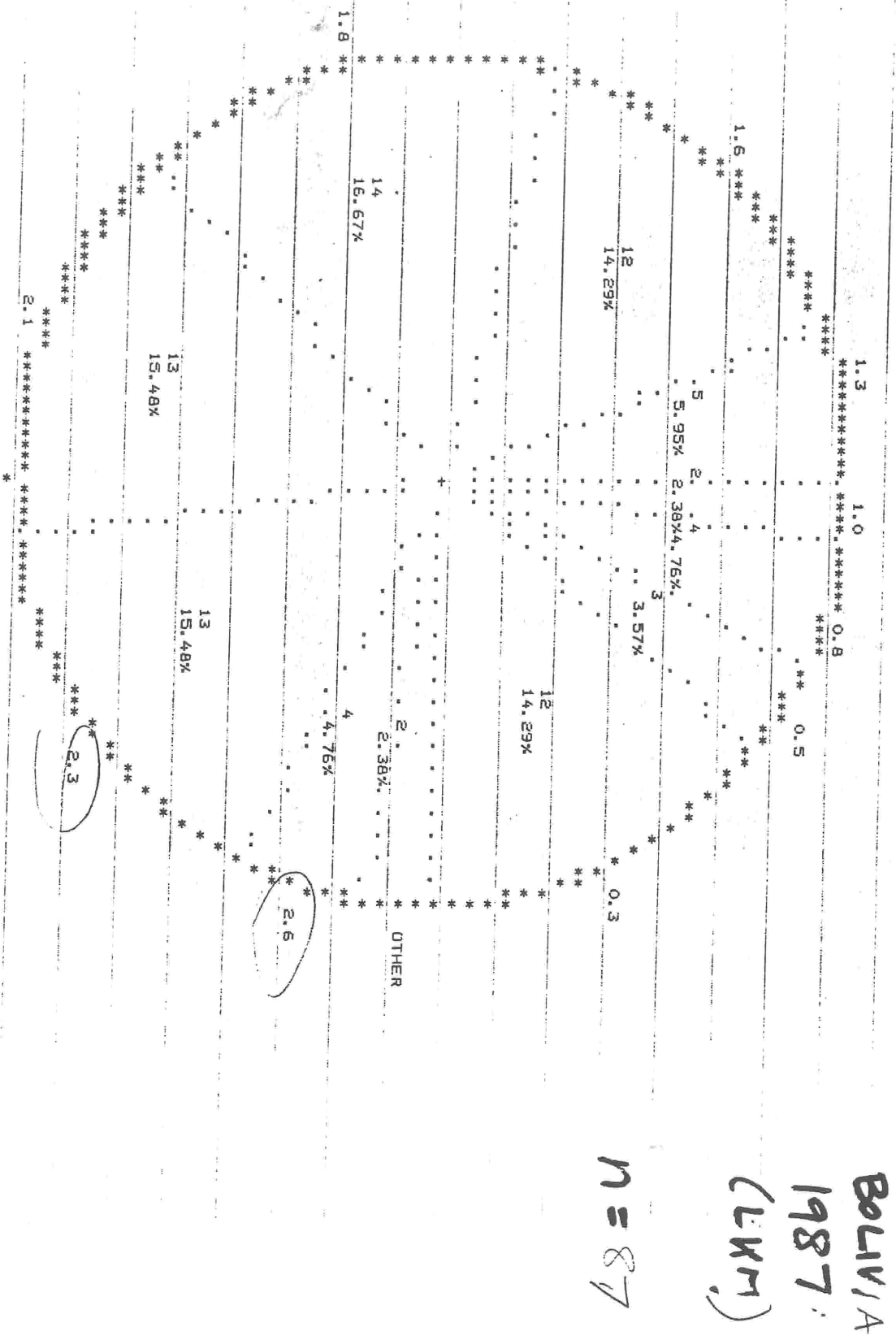
Lukumata
86

BOLIVIA
1986
SAMPLE

N=38

CL1

FREQ PIE CHART OF FLOTVOL



n=87

(LEVM)

1987

BOLIVIA

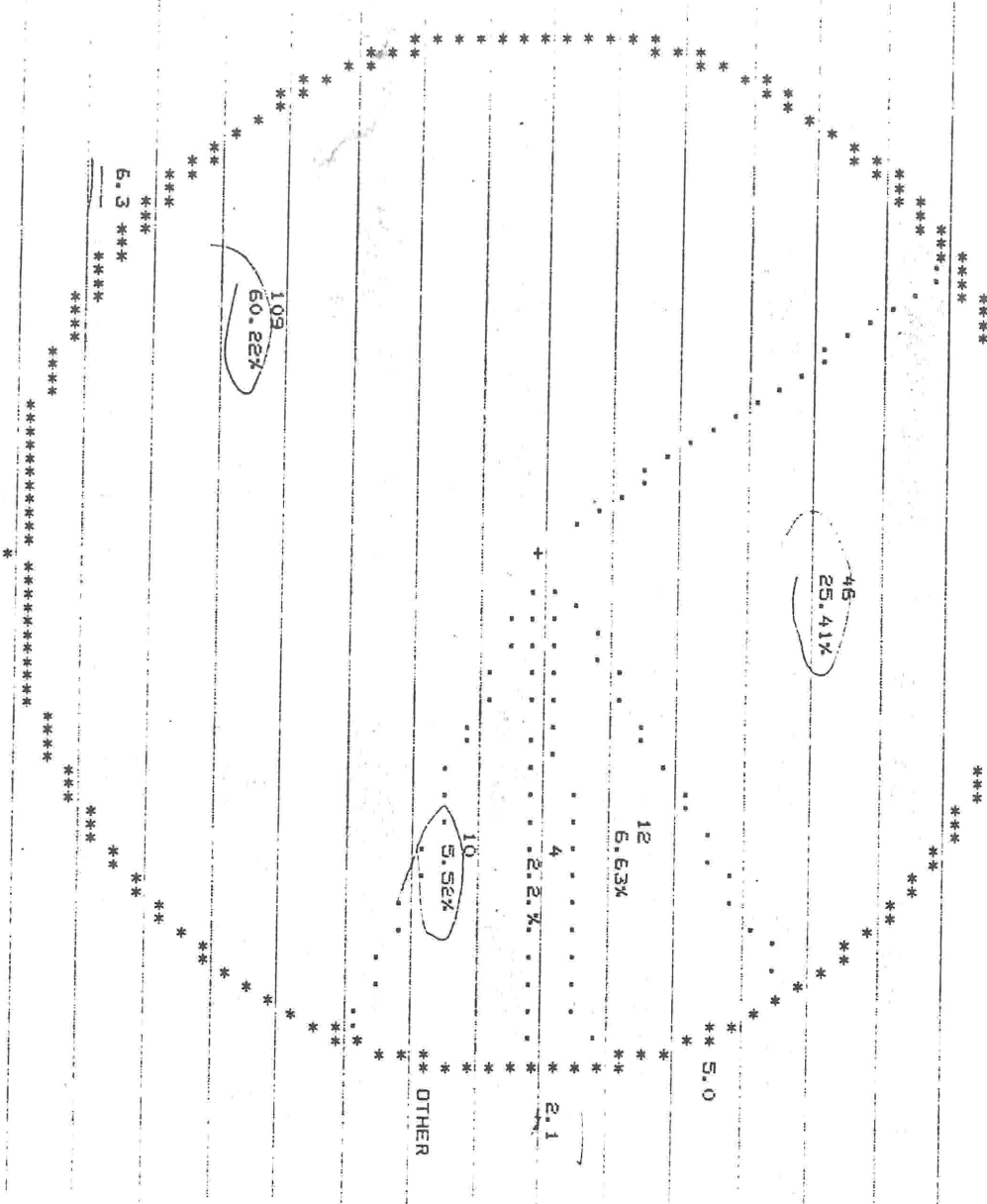
5.7

1989 AK-E
T IWANAKU

Ms 179

John,
Martin +

Linda



6.3 ***

E: THE PROCEDURE CHART USED 0.32 SECONDS AND BAK AND PRINTED PAGES 1 TO 4.

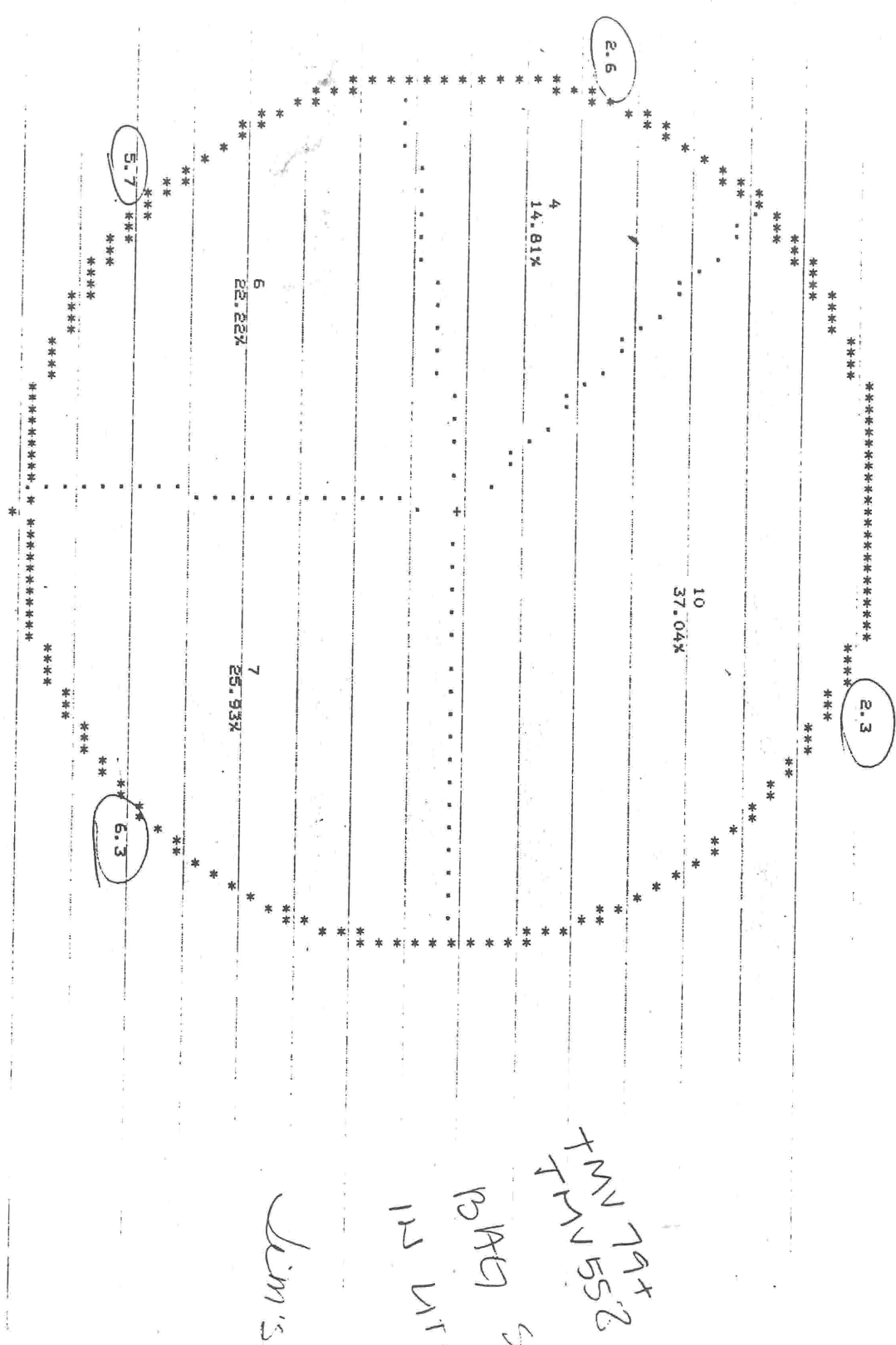
SAS INSTITUTE INC.

SAS CIRCLE

PO BOX 8000

CARY, N.C. 27512-8000

ROXIMATE ACCUMULATED JOB COST, AT NORMAL UNIVERSITY RATES
CHARGES @ \$72.50 PER MINUTE..... \$2.05



IE: THE PROCEDURE CHART USED 0.50 SECONDS AND BAK AND PRINTED PAGES 1 TO 7.

RE: SAS INSTITUTE INC.
SAS CIRCLE
PO BOX 8000
CARY, N.C. 27512-8000

APPROXIMATE ACCUMULATED JOB COST, AT NORMAL UNIVERSITY RATES
CHARGES @ \$72.50 PER MINUTE..... \$2.05

