[] Dendrochronology Program Library Run CH\_M Program COF 15:33 Mon 22 Jan 2007 Page 1

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[] P R O G R A M C O F E C H A Version 6.06P 26321

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

Title of run: Camel's Hump Mid Corr4-30

File of DATED series: ch\_mid\_compact\_corr4.dta

CONTENTS:

RUN CONTROL OPTIONS SELECTED VALUE

1 Cubic smoothing spline 50% wavelength cutoff for filtering

32 years

2 Segments examined are 30 years lagged successively by 15 years

3 Autoregressive model applied A Residuals are used in master dating series and testing

4 Series transformed to logarithms Y Each series log-transformed for master dating series and testing

5 CORRELATION is Pearson (parametric, quantitative)

Critical correlation, 99% confidence level .4226

6 Master dating series saved N

7 Ring measurements listed Y

8 Parts printed 1234567

9 Absent rings are omitted from master series and segment correlations (Y)

Time span of Master dating series is 1910 to 2006 97 years

Continuous time span is 1910 to 2006 97 years

Portion with two or more series is 1911 to 2006 96 years

>> 62a 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 62a 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 62a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 62b 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 62b 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 62b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 64a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 64b 1998 absent in 1 of 40 series, but is not usually narrow: master index is .950

>> 64b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 65b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 66a 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 66a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 66b 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 66b 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 66b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 67a 1992 absent in 1 of 40 series, but is not usually narrow: master index is .083

>> 67b 1975 absent in 1 of 40 series, but is not usually narrow: master index is -.068

>> 70b 2000 absent in 4 of 40 series, but is not usually narrow: master index is -.119

>> 74a 1999 absent in 1 of 40 series, but is not usually narrow: master index is -.079

>> 74a 2000 absent in 4 of 40 series, but is not usually narrow: master index is -.119

>> 74a 2002 absent in 3 of 40 series, but is not usually narrow: master index is -.282

>> 74a 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 74a 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 74a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 74b 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 74b 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 74b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 76a 2002 absent in 3 of 40 series, but is not usually narrow: master index is -.282

>> 76a 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 76a 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 76a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 76b 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 76b 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 76b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 77a 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 77a 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 77a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 77b 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 77b 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 77b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 79a 2000 absent in 4 of 40 series, but is not usually narrow: master index is -.119

>> 79a 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

>> 79a 2005 absent in 11 of 40 series, but is not usually narrow: master index is .745

>> 79a 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 79b 2006 absent in 15 of 40 series, but is not usually narrow: master index is .988

>> 80a 2000 absent in 4 of 40 series, but is not usually narrow: master index is -.119

>> 80a 2002 absent in 3 of 40 series, but is not usually narrow: master index is -.282

>> 80a 2004 absent in 11 of 40 series, but is not usually narrow: master index is .188

ABSENT RINGS listed by SERIES: (See Master Dating Series for absent rings listed by year)

62a 5 absent rings: 1985 2003 2004 2005 2006

62b 4 absent rings: 2003 2004 2005 2006

63b 1 absent rings: 1995

64a 1 absent rings: 2006

64b 2 absent rings: 1998 2006

65b 1 absent rings: 2006

66a 3 absent rings: 2003 2005 2006

66b 4 absent rings: 2003 2004 2005 2006

67a 1 absent rings: 1992

67b 1 absent rings: 1975

70b 1 absent rings: 2000

74a 8 absent rings: 1999 2000 2001 2002 2003 2004 2005 2006

74b 4 absent rings: 2003 2004 2005 2006

76a 5 absent rings: 2002 2003 2004 2005 2006

76b 3 absent rings: 2004 2005 2006

77a 4 absent rings: 2003 2004 2005 2006

77b 3 absent rings: 2004 2005 2006

79a 5 absent rings: 2000 2003 2004 2005 2006

79b 1 absent rings: 2006

80a 3 absent rings: 2000 2002 2004

60 absent rings 1.680%

Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab Year Value No Ab

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1950 -.026 40 2000 -.119 40 4<<

1951 .444 40 2001 -.418 40 1

1952 1.092 40 2002 -.282 40 3<<

1953 -1.080 40 2003 -1.125 40 9

1954 .738 40 2004 .188 40 11<<

1955 1.115 40 2005 .745 40 11<<

1956 1.607 40 2006 .988 40 15<<

1957 -.684 40

1958 .340 40

1959 -.084 40

1910 -2.427 1 1960 .222 40

1911 .385 2 1961 .599 40

1912 -2.276 4 1962 -.169 40

1913 -2.318 6 1963 -.068 40

1914 .309 7 1964 1.061 40

1915 -.354 13 1965 .818 40

1916 -.080 19 1966 -.124 40

1917 -.407 22 1967 .158 40

1918 .863 26 1968 -1.421 40

1919 .085 29 1969 .378 40

1920 .861 31 1970 -.245 40

1921 -.612 34 1971 .267 40

1922 .584 34 1972 .194 40

1923 -.267 35 1973 -.211 40

1924 .769 36 1974 -.386 40

1925 -2.469 37 1975 -.068 40 1<<

1926 -.995 38 1976 -.750 40

1927 .996 38 1977 .584 40

1928 1.449 40 1978 1.172 40

1929 1.137 40 1979 -.423 40

1930 .164 40 1980 -.022 40

1931 1.327 40 1981 -.331 40

1932 .984 40 1982 .863 40

1933 -.303 40 1983 .496 40

1934 .374 40 1984 -.579 40

1935 .470 40 1985 -1.630 40 1

1936 -3.469 40 1986 -.554 40

1937 -1.039 40 1987 -.445 40

1938 -.322 40 1988 .956 40

1939 .536 40 1989 .535 40

1940 1.015 40 1990 .093 40

1941 .940 40 1991 .983 40

1942 .643 40 1992 .083 40 1<<

1943 1.027 40 1993 .124 40

1944 .231 40 1994 1.031 40

1945 -3.761 40 1995 -.534 40 1

1946 -1.631 40 1996 -.288 40

1947 .641 40 1997 1.005 40

1948 -.297 40 1998 .950 40 1<<

1949 -.451 40 1999 -.079 40 1<<

PART 5: CORRELATION OF SERIES BY SEGMENTS: Camel's Hump Mid Corr4-30 15:33 Mon 22 Jan 2007 Page 5

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Correlations of 30-year dated segments, lagged 15 years

Flags: A = correlation under .4226 but highest as dated; B = correlation higher at other than dated position

Seq Series Time\_span 1905 1920 1935 1950 1965 1980

1934 1949 1964 1979 1994 2009

--- -------- --------- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----

1 61a 1919 2006 .93 .93 .85 .33B .27A .30B

2 61b 1919 2006 .93 .93 .88 .58 .43 .42A

3 62a 1910 2006 .65 .87 .80 .66 .62 .42

4 62b 1917 2006 .76 .85 .84 .74 .85 .85

5 63a 1915 2006 .78 .81 .83 .33B .30A .60

6 63b 1918 2006 .78 .90 .89 .52 .42A .42A

7 64a 1923 2006 .88 .85 .53 .40A .50

8 64b 1921 2006 .75 .86 .64 .43 .28B

9 65a 1928 2006 .95 .96 .41A-.17B-.10B

10 65b 1915 2006 .82 .87 .93 .74 .46 .56

11 66a 1926 2006 .79 .73 .42B .29A .38A

12 66b 1913 2006 .59 .68 .85 .71 .65 .55

13 67a 1916 2006 .67 .72 .70 .45 .31B .40A

14 67b 1916 2006 .71 .73 .73 .55 .12B .04B

15 68a 1916 2006 .86 .87 .87 .67 .64 .62

16 68b 1920 2006 .90 .93 .55 .58 .76

17 69a 1919 2006 .87 .88 .87 .49 .25B .40A

18 69b 1924 2006 .86 .81 .56 .61 .64

19 70a 1915 2006 .53 .66 .71 .63 .68 .78

20 70b 1912 2006 .78 .82 .86 .62 .50B .59

21 71a 1916 2006 .55 .53 .50 .57 .61 .67

22 71b 1915 2006 .71 .79 .69 .59 .12B .03B

23 72a 1918 2006 .93 .90 .85 .49 .37A .69

24 72b 1920 2006 .92 .89 .68 .69 .75

25 73a 1914 2006 .79 .91 .87 .52 .55 .54

26 73b 1913 2006 .75 .86 .76 .29B .56 .65

27 74a 1918 2006 .78 .78 .79 .76 .49 .05B

28 74b 1915 2006 .85 .91 .85 .67 .53 .43

29 75a 1918 2006 .58 .55 .36B .49 .63 .78

30 75b 1925 2006 .68 .56 .42A .63 .70

31 76a 1917 2006 .84 .85 .85 .54 .36A .63

32 76b 1917 2006 .80 .80 .82 .50 .43 .61

33 77a 1916 2006 .75 .81 .78 .54 .59 .60

34 77b 1916 2006 .89 .90 .87 .61 .62 .76

35 78a 1915 2006 .73 .86 .90 .32B .11B .12B

36 78b 1921 2006 .91 .87 .36A .32A .57

37 79a 1928 2006 .71 .68 .32B .36A .38A

38 79b 1921 2006 .66 .57 .51 .53 .57

39 80a 1912 2006 .85 .85 .75 .51 .55 .37A

40 80b 1911 2006 .84 .81 .78 .42A .43 .63

Av segment correlation .77 .82 .79 .53 .45 .50

PART 6: POTENTIAL PROBLEMS: Camel's Hump Mid Corr4-30 15:33 Mon 22 Jan 2007 Page 5

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For each series with potential problems the following diagnostics may appear:

[A] Correlations with master dating series of flagged 30-year segments of series filtered with 32-year spline,

at every point from ten years earlier (-10) to ten years later (+10) than dated

[B] Effect of those data values which most lower or raise correlation with master series

Symbol following year indicates value in series is greater (>) or lesser (<) than master series value

[C] Year-to-year changes very different from the mean change in other series

[D] Absent rings (zero values)

[E] Values which are statistical outliers from mean for the year

====================================================================================================================================

61a 1919 to 2006 88 years Series 1

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 9 -.38 .04 .07 -.12 -.09 -.08 .00 -.09 -.04 -.05 .33|-.33 .14 -.03 .08 -.08 -.16 -.04 .30 .41\* .25

1965 1994 0 -.11 .12 -.10 -.01 -.02 .17 .16 -.15 -.10 -.08 .27\*-.12 .03 -.01 .17 -.04 -.07 -.24 -.22 .23 .13

1977 2006 -10 .33\*-.07 -.32 -.01 -.05 .10 .07 -.09 -.06 .02 .30| - - - - - - - - - -

[B] Entire series, effect on correlation ( .696) is:

Lower 1979> -.022 1966< -.017 1957> -.016 1960< -.010 1968> -.009 1973> -.008 Higher 1936 .082 1945 .051

1950 to 1979 segment:

Lower 1979> -.074 1957> -.045 1960< -.030 1977< -.029 1973> -.023 1961< -.015 Higher 1956 .058 1976 .037

1965 to 1994 segment:

Lower 1979> -.078 1977< -.029 1989< -.024 1973> -.022 1983< -.016 1987> -.015 Higher 1978 .045 1976 .036

1977 to 2006 segment:

Lower 1979> -.101 1998< -.028 2001> -.027 1977< -.026 1987> -.023 1989< -.021 Higher 1995 .069 1978 .046

61a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1919 173

1920 233 169 255 168 332 145 202 385 342 317

1930 335 475 387 225 437 400 16 210 265 394

1940 412 347 260 352 362 97 178 238 245 256

1950 233 286 335 249 363 406 427 313 248 178

1960 139 177 181 168 201 195 88 191 175 323

1970 195 210 251 252 155 171 91 93 188 203

1980 84 79 119 61 47 56 23 70 71 31

1990 18 42 40 85 74 22 24 42 33 33

2000 64 76 49 47 96 66 117

====================================================================================================================================

61b 1919 to 2006 88 years Series 2

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1977 2006 0 .02 -.09 -.11 -.02 -.01 .35 -.07 -.04 -.17 .13 .42\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .734) is:

Lower 1990< -.020 1985> -.018 1957> -.014 1979> -.012 1958< -.009 1974> -.009 Higher 1936 .060 1945 .043

1977 to 2006 segment:

Lower 1985> -.086 1979> -.055 1990< -.042 1987> -.033 1977< -.024 1989< -.017 Higher 2003 .055 1978 .051

61b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1919 219

1920 211 137 216 193 256 109 205 314 489 411

1930 355 682 577 353 512 519 20 256 290 466

1940 507 436 270 303 334 103 177 279 264 342

1950 269 284 333 237 352 428 387 311 228 243

1960 289 329 234 209 266 300 193 251 105 259

1970 236 196 160 185 217 136 109 103 241 163

1980 80 52 95 86 61 82 32 92 62 35

1990 7 66 63 80 118 33 61 94 53 52

2000 27 30 37 7 87 75 124

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62a 1910 to 2006 97 years Series 3

[\*] Early part of series cannot be checked from 1910 to 1910 -- not matched by another series

[B] Entire series, effect on correlation ( .589) is:

Lower 1985< -.037 1912> -.022 1913> -.021 1915> -.009 1911> -.009 2006< -.007 Higher 1945 .078 1925 .011

[D] 5 Absent rings: Year Master N series Absent

1985 -1.630 40 1

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1985 -5.5 SD

62a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1910 100 231 178 189 230 268 204 223 205 213

1920 256 216 267 293 302 186 218 322 359 334

1930 205 247 269 193 217 233 136 235 199 215

1940 203 176 175 209 136 24 65 138 117 80

1950 117 107 142 81 107 117 92 15 42 87

1960 103 66 77 100 136 125 97 72 32 88

1970 59 79 79 61 83 68 42 51 58 26

1980 29 20 47 35 42 0 34 33 41 43

1990 45 37 18 27 63 47 42 51 39 40

2000 13 32 17 0 0 0 0

====================================================================================================================================

62b 1917 to 2006 90 years Series 4

[B] Entire series, effect on correlation ( .734) is:

Lower 1919< -.040 1925> -.040 1956< -.008 1992< -.006 1958< -.006 1962> -.005 Higher 1945 .045 1936 .042

[D] 4 Absent rings: Year Master N series Absent

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

62b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1917 261 314 218

1920 297 265 339 261 377 315 343 386 396 424

1930 398 425 328 258 255 190 82 138 154 195

1940 195 198 168 217 121 16 66 90 86 126

1950 145 210 178 85 151 148 104 17 42 79

1960 94 90 115 113 152 143 116 86 43 93

1970 59 93 114 75 77 86 52 92 131 71

1980 71 62 98 96 74 51 61 58 91 78

1990 75 137 53 53 101 36 33 62 74 28

2000 29 34 9 0 0 0 0

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63a 1915 to 2006 92 years Series 5

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 -4 -.31 .09 .15 -.15 -.25 -.10 .40\*-.12 -.20 .11 .33| .03 -.06 -.29 .13 .13 .05 -.01 -.01 .16 .05

1965 1994 0 -.13 -.01 -.03 -.20 -.08 .08 .01 .03 .12 .18 .30\*-.11 -.04 .07 -.03 -.05 .07 -.09 .10 -.08 -.19

[B] Entire series, effect on correlation ( .659) is:

Lower 1968> -.033 1925> -.024 2004< -.018 1977< -.015 1961< -.011 1932< -.009 Higher 1936 .097 1945 .028

1950 to 1979 segment:

Lower 1968> -.140 1977< -.060 1961< -.043 1966> -.025 1976> -.023 1971< -.022 Higher 1956 .085 1953 .057

1965 to 1994 segment:

Lower 1968> -.156 1977< -.071 1971< -.027 1976> -.025 1966> -.023 1969< -.021 Higher 1991 .060 1985 .050

63a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 209 251 219 274 231

1920 293 236 302 252 381 238 231 316 298 253

1930 196 241 163 160 185 178 41 89 195 145

1940 181 145 166 171 115 47 82 115 133 105

1950 141 144 114 69 125 172 201 73 67 66

1960 90 49 43 80 80 92 81 41 70 44

1970 41 31 30 35 26 46 39 23 46 26

1980 39 18 45 42 25 22 36 18 42 39

1990 53 75 33 44 52 21 21 58 69 41

2000 25 23 29 3 2 13 11

====================================================================================================================================

63b 1918 to 2006 89 years Series 6

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 0 -.15 -.33 .20 -.22 .24 .09 -.13 .14 .22 -.03 .42\*-.40 -.26 .23 -.29 .11 -.01 -.28 .12 .17 -.06

1977 2006 0 -.22 -.17 .18 -.08 .09 .11 -.01 .05 .28 .04 .42\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .625) is:

Lower 1918< -.045 1987< -.015 1925> -.014 1968> -.009 1976< -.009 1952< -.008 Higher 1936 .072 1945 .050

1965 to 1994 segment:

Lower 1968> -.051 1984> -.037 1985> -.030 1979> -.021 1987< -.019 1969< -.013 Higher 1976 .044 1991 .032

1977 to 2006 segment:

Lower 1984> -.036 1985> -.030 2005< -.028 2004< -.026 1987< -.022 1979> -.020 Higher 1995 .069 2003 .036

[D] 1 Absent rings: Year Master N series Absent

1995 -.534 40 1

63b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1918 267 287

1920 334 307 354 284 402 277 317 373 448 415

1930 313 316 315 181 167 176 44 102 149 173

1940 218 186 156 157 110 38 96 188 125 87

1950 100 132 95 62 104 170 169 81 100 94

1960 164 109 121 124 115 102 95 105 74 57

1970 45 39 38 13 18 66 12 60 70 50

1980 55 43 65 58 54 38 39 10 52 41

1990 18 57 27 43 46 0 37 49 78 48

2000 46 28 38 8 4 5 12

====================================================================================================================================

64a 1923 to 2006 84 years Series 7

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 0 -.07 -.15 -.06 -.29 -.03 -.01 -.19 -.02 .18 .05 .40\* .03 .05 .00 -.06 .06 .03 -.25 .04 -.27 -.18

[B] Entire series, effect on correlation ( .693) is:

Lower 1970< -.024 1976> -.019 1982< -.018 2006< -.015 1946> -.010 1979> -.010 Higher 1945 .080 1936 .017

1965 to 1994 segment:

Lower 1976> -.073 1982< -.067 1979> -.039 1991< -.029 1981> -.028 1970< -.021 Higher 1968 .153 1985 .084

[D] 1 Absent rings: Year Master N series Absent

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

64a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1923 314 404 252 305 427 469 412

1930 349 377 325 243 252 305 178 222 200 238

1940 341 281 238 254 206 84 174 254 246 173

1950 126 147 217 137 240 277 217 145 224 205

1960 182 156 172 180 215 180 156 148 84 119

1970 68 88 138 117 121 145 164 135 123 123

1980 101 133 76 98 40 16 41 39 76 99

1990 134 92 102 171 186 71 83 148 117 82

2000 49 75 42 2 8 13 0

====================================================================================================================================

64b 1921 to 2006 86 years Series 8

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1977 2006 -6 -.30 .24 .15 -.37 .32\* .05 .08 .31 -.32 .21 .28| - - - - - - - - - -

[B] Entire series, effect on correlation ( .473) is:

Lower 1998< -.080 2006< -.024 1925> -.019 2004< -.017 1981> -.014 1976> -.014 Higher 1945 .063 1968 .023

1977 to 2006 segment:

Lower 1998< -.147 2006< -.054 1981> -.037 2004< -.033 1999> -.019 2002> -.014 Higher 1985 .117 1997 .075

[D] 2 Absent rings: Year Master N series Absent

1998 .950 40 1 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

64b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1921 248 309 298 373 307 322 491 437 388

1930 328 288 273 232 251 244 172 169 212 280

1940 295 271 329 353 232 108 161 241 172 183

1950 143 184 243 143 262 233 288 153 174 199

1960 191 177 182 178 226 192 200 170 68 103

1970 82 67 115 90 71 79 117 103 94 72

1980 76 134 91 91 59 27 70 37 44 82

1990 26 40 67 21 112 56 65 153 0 70

2000 67 54 74 45 2 39 0

====================================================================================================================================

65a 1928 to 2006 79 years Series 9

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.16 -.12 .15 -.01 -.14 -.04 .39 -.10 .05 -.35 .41\* .09 -.09 -.20 .11 .04 .17 .07 -.10 .26 .04

1965 1994 -4 .13 -.03 -.04 .14 -.13 .24 .49\*-.12 -.03 -.38 -.17| .29 -.25 -.20 .22 -.09 .16 .31 -.31 .05 .06

1977 2006 -4 .22 -.07 -.04 .06 -.19 .17 .42\* .06 -.04 -.30 -.10| - - - - - - - - - -

[B] Entire series, effect on correlation ( .644) is:

Lower 1968> -.064 1978< -.023 2006< -.020 1988< -.018 1985> -.015 2001> -.015 Higher 1945 .124 1936 .115

1950 to 1979 segment:

Lower 1968> -.275 1978< -.098 1972< -.010 1970> -.006 1969< -.006 1975< -.005 Higher 1956 .083 1953 .061

1965 to 1994 segment:

Lower 1968> -.191 1978< -.066 1988< -.050 1984> -.021 1987> -.020 1989< -.020 Higher 1982 .109 1977 .080

1977 to 2006 segment:

Lower 1978< -.064 2006< -.055 1988< -.049 2001> -.034 1987> -.029 1984> -.024 Higher 1982 .086 1977 .062

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1968 +3.8 SD

65a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1928 453 475

1930 341 446 438 310 389 352 101 203 249 303

1940 287 261 236 255 226 75 133 240 238 201

1950 225 267 252 174 295 301 379 213 239 217

1960 216 224 195 210 238 229 176 194 284 210

1970 174 188 150 141 151 133 119 199 125 90

1980 108 109 180 126 113 107 120 138 77 47

1990 80 80 61 88 65 55 33 59 70 70

2000 72 84 44 12 12 23 7

====================================================================================================================================

65b 1915 to 2006 92 years Series 10

[B] Entire series, effect on correlation ( .761) is:

Lower 1925> -.022 2006< -.020 1985> -.015 1988< -.014 1968> -.007 1975< -.006 Higher 1936 .064 1945 .053

[D] 1 Absent rings: Year Master N series Absent

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

65b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 209 247 273 323 278

1920 289 185 243 289 359 254 282 444 439 435

1930 291 384 402 325 321 280 45 180 238 247

1940 267 285 269 295 208 71 151 197 219 190

1950 232 229 273 153 229 209 271 140 248 243

1960 255 221 174 209 258 245 174 164 141 131

1970 124 118 143 89 98 70 88 144 137 70

1980 135 81 140 132 81 86 74 43 50 76

1990 59 93 63 46 85 58 34 75 72 38

2000 36 46 20 8 45 24 0

====================================================================================================================================

66a 1926 to 2006 81 years Series 11

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 -8 .10 -.06 .58\* .05 .06 -.03 .02 -.03 -.01 -.41 .42|-.20 -.17 -.21 .18 .08 .02 -.04 -.04 .21 -.04

1965 1994 0 -.02 -.15 .26 -.07 .21 -.02 -.17 .04 .03 -.04 .29\*-.10 -.21 -.06 -.25 .23 .25 .01 .22 .16 -.03

1977 2006 0 .01 -.01 -.01 -.07 .29 -.12 -.23 .21 .08 .08 .38\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .621) is:

Lower 1968> -.021 1978< -.019 1955< -.011 1962> -.010 2000> -.009 1953< -.008 Higher 1945 .101 1936 .018

1950 to 1979 segment:

Lower 1968> -.076 1978< -.047 1957> -.030 1962> -.030 1955< -.027 1965< -.019 Higher 1953 .184 1979 .040

1965 to 1994 segment:

Lower 1978< -.092 1968> -.078 1965< -.041 1984> -.013 1993< -.012 1970> -.012 Higher 1979 .078 1985 .048

1977 to 2006 segment:

Lower 1978< -.078 2000> -.041 1996> -.030 2006< -.026 2005< -.026 1984> -.023 Higher 1979 .075 1985 .033

[D] 3 Absent rings: Year Master N series Absent

2003 -1.125 40 9

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1953 -4.9 SD

66a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1926 246 391 392 353

1930 291 451 434 301 360 312 172 193 238 287

1940 313 319 315 308 278 110 168 310 209 213

1950 229 212 193 108 180 158 178 166 163 136

1960 152 193 206 141 205 151 158 156 161 209

1970 178 185 171 158 139 108 78 101 76 45

1980 58 95 103 143 116 82 66 54 100 137

1990 131 139 124 79 103 69 135 124 125 83

2000 151 66 16 0 6 0 0

====================================================================================================================================

66b 1913 to 2006 94 years Series 12

[B] Entire series, effect on correlation ( .675) is:

Lower 1921< -.037 1925> -.023 1928< -.011 1990> -.008 1980< -.007 1979> -.007 Higher 1945 .046 1913 .017

[D] 4 Absent rings: Year Master N series Absent

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1921 -5.0 SD

66b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 32 117 135 143 143 215 134

1920 194 98 253 210 343 243 293 371 269 269

1930 245 355 367 246 311 332 182 191 223 237

1940 257 257 302 318 226 42 98 256 149 132

1950 154 103 137 97 297 229 294 67 139 143

1960 155 140 81 85 90 96 81 99 33 70

1970 69 95 105 105 86 104 41 109 131 107

1980 41 61 112 88 74 22 45 46 96 130

1990 200 211 153 94 65 42 22 50 50 26

2000 21 5 6 0 0 0 0

====================================================================================================================================

67a 1916 to 2006 91 years Series 13

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 -5 .08 .00 -.10 -.21 -.12 .41\* .06 -.27 -.06 -.36 .31| .30 .00 .10 .09 .01 -.05 -.19 -.07 .12 -.29

1977 2006 0 .10 -.05 -.05 -.01 -.11 .09 .04 -.44 -.22 -.09 .40\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .526) is:

Lower 1992< -.044 1943< -.021 1916< -.019 1925> -.018 1994< -.013 1987> -.011 Higher 1945 .120 1928 .007

1965 to 1994 segment:

Lower 1994< -.049 1992< -.048 1987> -.034 1979> -.027 1972< -.023 1974> -.021 Higher 1977 .046 1969 .030

1977 to 2006 segment:

Lower 1992< -.067 1994< -.051 1995> -.046 1987> -.041 1979> -.030 1978< -.010 Higher 1977 .032 1984 .026

[D] 1 Absent rings: Year Master N series Absent

1992 .083 40 1 >> WARNING: Ring is not usually narrow

67a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 170 263 336 364

1920 419 291 383 289 353 312 320 388 450 453

1930 399 397 335 264 371 297 197 206 170 172

1940 223 222 191 118 132 50 109 150 164 100

1950 138 198 168 114 184 147 120 98 117 108

1960 144 206 135 121 147 129 127 147 112 188

1970 141 116 79 81 129 99 92 187 119 110

1980 92 71 84 76 53 51 75 119 98 90

1990 58 78 0 63 30 60 63 68 82 16

2000 11 10 11 13 82 63 135

====================================================================================================================================

67b 1916 to 2006 91 years Series 14

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 -9 -.17 .45\* .12 .17 -.01 .11 -.20 -.01 -.15 -.06 .12|-.31 .09 .17 .19 -.23 -.27 .04 .13 .14 .22

1977 2006 -7 -.25 .27 -.07 .42\*-.04 -.13 -.13 -.16 -.29 .14 .04| - - - - - - - - - -

[B] Entire series, effect on correlation ( .493) is:

Lower 1975< -.055 1987> -.023 1925> -.021 1995> -.020 1936> -.014 1916< -.010 Higher 1945 .129 1953 .010

1965 to 1994 segment:

Lower 1987> -.051 1975< -.045 1979> -.030 1982< -.029 1988< -.026 1977< -.010 Higher 1976 .052 1969 .034

1977 to 2006 segment:

Lower 1995> -.086 1987> -.082 1982< -.041 1988< -.038 1979> -.035 1977< -.017 Higher 1999 .045 1991 .036

[D] 1 Absent rings: Year Master N series Absent

1975 -.068 40 1 >> WARNING: Ring is not usually narrow

[E] Outliers 2 3.0 SD above or -4.5 SD below mean for year

1975 -5.2 SD; 1987 +3.4 SD

67b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 177 295 372 292

1920 379 221 364 293 387 314 298 388 442 401

1930 349 425 377 286 281 224 179 169 155 163

1940 169 179 202 187 145 45 94 106 120 69

1950 80 123 121 57 81 83 130 54 120 51

1960 104 71 9 127 216 196 98 209 115 218

1970 142 113 96 86 105 0 15 49 81 88

1980 79 49 41 61 58 48 45 131 55 63

1990 48 61 22 17 29 63 50 37 47 9

2000 20 18 5 18 30 43 43

====================================================================================================================================

68a 1916 to 2006 91 years Series 15

[B] Entire series, effect on correlation ( .763) is:

Lower 1921> -.013 1976< -.011 1957> -.010 1985> -.010 1916< -.009 1983< -.008 Higher 1945 .066 1936 .016

68a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 48 82 126 116

1920 231 210 204 170 170 99 176 236 239 241

1930 185 204 240 237 274 228 115 115 168 239

1940 236 241 231 277 223 85 147 208 201 157

1950 211 239 247 191 305 287 334 253 252 220

1960 202 216 159 158 251 244 214 242 163 221

1970 180 204 210 193 139 158 105 158 154 131

1980 132 128 230 133 118 125 121 95 197 141

1990 142 140 132 116 120 64 80 97 103 51

2000 44 55 37 48 58 109 95

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68b 1920 to 2006 87 years Series 16

[B] Entire series, effect on correlation ( .787) is:

Lower 1968> -.026 1967< -.015 1921> -.012 1920< -.011 1995< -.007 2001< -.006 Higher 1945 .054 1936 .048

68b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1920 211 260 309 232 213 124 183 262 264 251

1930 237 267 207 174 148 177 69 109 187 201

1940 192 215 160 206 198 78 137 200 154 148

1950 219 222 240 185 256 225 302 194 194 187

1960 185 192 199 178 207 230 164 143 186 173

1970 180 189 208 155 126 137 131 176 215 120

1980 133 125 157 144 103 89 102 86 171 137

1990 130 113 101 95 129 66 91 97 101 78

2000 85 63 78 80 128 101 100

====================================================================================================================================

69a 1919 to 2006 88 years Series 17

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 -10 .40\*-.19 .14 -.49 .02 .10 .29 -.23 -.06 .02 .25| .21 -.22 .24 -.07 .07 -.10 -.12 -.19 -.05 -.25

1977 2006 0 .09 -.11 .30 -.17 -.04 .02 .25 -.05 -.18 .13 .40\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .703) is:

Lower 1980< -.017 1979> -.016 1975> -.014 1989< -.013 1982< -.012 1968> -.012 Higher 1936 .059 1925 .041

1965 to 1994 segment:

Lower 1979> -.068 1982< -.046 1968> -.040 1989< -.037 1980< -.032 1975> -.028 Higher 1985 .082 1984 .057

1977 to 2006 segment:

Lower 1979> -.078 1982< -.048 1989< -.037 1980< -.036 1995> -.035 2001> -.022 Higher 2003 .080 1985 .067

69a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1919 206

1920 208 192 198 175 175 51 109 250 294 212

1930 235 236 272 202 210 166 41 154 158 189

1940 188 200 192 180 145 62 111 153 133 94

1950 141 131 121 91 118 206 233 103 140 124

1960 126 124 172 134 192 178 152 87 98 131

1970 93 103 86 90 104 182 94 85 101 115

1980 46 63 54 60 31 28 66 62 92 51

1990 62 72 75 102 89 79 97 165 109 66

2000 48 81 63 5 24 67 89

====================================================================================================================================

69b 1924 to 2006 83 years Series 18

[B] Entire series, effect on correlation ( .737) is:

Lower 1972< -.018 1999> -.017 1945> -.008 1960< -.008 1976> -.008 1953> -.008 Higher 1936 .075 1925 .017

69b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1924 245 79 161 353 256 249

1930 234 288 270 220 227 258 65 109 192 215

1940 220 228 237 251 176 111 117 200 190 137

1950 185 174 206 162 152 213 267 143 201 131

1960 105 127 108 130 132 120 160 130 75 159

1970 170 184 76 136 109 105 139 233 247 110

1980 161 91 115 104 71 50 76 41 100 93

1990 130 173 109 82 108 53 56 80 55 120

2000 69 68 68 6 34 31 82

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70a 1915 to 2006 92 years Series 19

[B] Entire series, effect on correlation ( .631) is:

Lower 1925> -.038 1944< -.019 1924< -.012 1976> -.011 1939< -.010 1916> -.008 Higher 1945 .046 1936 .037

70a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 397 503 418 480 412

1920 454 407 534 274 251 316 389 522 649 509

1930 407 383 352 209 187 226 71 116 127 86

1940 130 137 138 146 50 19 44 62 72 67

1950 47 68 79 34 95 81 76 73 94 93

1960 117 140 95 109 112 109 61 63 52 86

1970 68 104 101 68 47 46 88 135 111 63

1980 69 85 100 91 62 35 60 91 122 104

1990 71 65 74 71 108 48 42 65 89 62

2000 38 36 55 31 89 66 97

====================================================================================================================================

70b 1912 to 2006 95 years Series 20

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 6 -.10 -.11 .28 -.16 -.02 .10 -.13 -.16 -.01 -.31 .50| .02 -.03 -.10 -.20 .20 .55\*-.19 .05 .01 -.09

[B] Entire series, effect on correlation ( .664) is:

Lower 2000< -.019 1979< -.017 1986> -.013 1967< -.012 1970< -.011 1966> -.007 Higher 1936 .023 1912 .020

1965 to 1994 segment:

Lower 1986> -.046 1985> -.043 1966> -.031 1967< -.030 1993< -.015 1973> -.014 Higher 1968 .055 1988 .039

[D] 1 Absent rings: Year Master N series Absent

2000 -.119 40 4 >> WARNING: Ring is not usually narrow

70b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1912 287 313 441 435 481 476 579 419

1920 442 406 435 340 404 272 227 270 338 315

1930 236 281 283 131 134 163 75 121 125 134

1940 209 200 208 214 118 52 67 132 143 91

1950 90 125 197 96 146 151 160 105 169 157

1960 102 112 109 122 157 122 134 73 53 86

1970 49 72 100 90 52 50 52 63 62 28

1980 61 45 96 82 42 45 95 60 93 57

1990 55 49 35 24 39 24 39 43 36 20

2000 0 6 19 4 25 39 30

====================================================================================================================================

71a 1916 to 2006 91 years Series 21

[B] Entire series, effect on correlation ( .542) is:

Lower 1945> -.041 1979< -.023 1925> -.019 1936> -.011 1970> -.008 1973< -.008 Higher 1968 .017 1985 .013

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1945 +3.2 SD

71a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 354 330 361 331

1920 341 294 351 247 363 284 244 372 334 343

1930 255 353 385 192 270 192 136 115 110 168

1940 153 122 111 151 137 95 49 111 88 55

1950 123 114 166 73 128 138 105 79 132 44

1960 64 46 41 42 108 87 84 78 19 71

1970 84 67 48 20 41 26 38 49 63 22

1980 55 50 69 57 51 35 70 67 69 81

1990 100 142 76 51 81 37 38 47 48 34

2000 20 5 20 4 25 51 48

====================================================================================================================================

71b 1915 to 2006 92 years Series 22

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 8 .02 .30 -.06 -.10 -.08 .16 -.21 -.17 -.30 .02 .12|-.11 .18 .01 .04 .05 -.04 -.01 .41\*-.02 -.27

1977 2006 -9 -.10 .28\* .14 .14 -.06 .01 -.04 -.04 -.48 .20 .03| - - - - - - - - - -

[B] Entire series, effect on correlation ( .548) is:

Lower 1936> -.023 1985> -.023 1977< -.017 1979> -.015 1974> -.015 1967< -.011 Higher 1925 .037 1945 .023

1965 to 1994 segment:

Lower 1985> -.083 1979> -.053 1977< -.049 1974> -.041 1987> -.028 1991< -.025 Higher 1968 .379 1978 .035

1977 to 2006 segment:

Lower 1985> -.088 1977< -.062 1979> -.062 1987> -.038 1991< -.034 1994< -.031 Higher 2003 .073 1984 .050

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1968 -5.3 SD

71b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 377 326 246 368 293

1920 337 242 249 204 212 125 138 219 306 276

1930 227 338 229 157 209 190 130 138 120 198

1940 225 138 144 188 129 49 54 152 63 58

1950 156 122 141 79 156 139 211 28 125 96

1960 84 96 63 111 145 115 67 43 16 87

1970 98 92 87 78 134 106 80 64 101 114

1980 83 85 79 95 68 100 117 125 74 107

1990 53 50 65 44 41 34 49 68 93 44

2000 37 12 13 4 17 63 20

====================================================================================================================================

72a 1918 to 2006 89 years Series 23

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 0 -.13 .06 .12 -.12 .24 -.14 .09 -.25 -.37 -.17 .37\*-.04 .04 .06 .14 .19 -.11 .08 -.02 .05 .13

[B] Entire series, effect on correlation ( .760) is:

Lower 1980< -.020 1966< -.018 1968> -.015 1948< -.010 1953> -.010 1975> -.010 Higher 1936 .054 1925 .032

1965 to 1994 segment:

Lower 1968> -.055 1980< -.051 1965< -.036 1973> -.029 1975> -.019 1966< -.017 Higher 1988 .048 1976 .047

72a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1918 260 143

1920 209 155 177 180 207 54 107 229 309 251

1930 159 313 291 192 247 218 42 141 190 225

1940 204 223 227 186 201 79 108 186 93 111

1950 220 232 226 170 199 224 266 130 191 203

1960 171 179 143 153 170 149 115 159 172 172

1970 182 199 168 197 178 222 122 144 176 121

1980 75 116 152 123 104 88 115 136 174 133

1990 115 101 78 100 122 73 92 136 130 83

2000 51 51 59 42 85 73 95

====================================================================================================================================

72b 1920 to 2006 87 years Series 24

[B] Entire series, effect on correlation ( .770) is:

Lower 1968< -.054 1957> -.008 1972> -.006 1975> -.005 1987> -.005 1990< -.005 Higher 1925 .028 1936 .028

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1968 -5.9 SD

72b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1920 248 196 209 185 195 49 150 302 359 322

1930 220 308 305 199 249 231 42 173 217 293

1940 220 296 268 232 142 44 92 199 136 108

1950 216 238 302 160 221 234 253 195 243 170

1960 155 186 168 185 219 183 122 127 49 129

1970 111 122 169 100 119 150 100 113 146 92

1980 107 87 122 94 60 63 92 111 165 95

1990 53 72 66 77 119 59 69 116 145 63

2000 43 48 24 30 72 63 94

====================================================================================================================================

73a 1914 to 2006 93 years Series 25

[B] Entire series, effect on correlation ( .713) is:

Lower 1914< -.033 1975< -.031 1998< -.016 1916> -.010 1996< -.010 1979> -.008 Higher 1936 .075 1945 .042

73a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1914 164 199 292 241 230 270

1920 263 228 201 193 232 136 197 245 290 269

1930 214 292 193 161 189 173 48 130 181 175

1940 196 191 150 194 113 47 121 211 100 104

1950 146 157 187 145 156 182 190 152 174 181

1960 157 168 152 137 144 183 141 160 97 277

1970 170 138 163 142 106 37 80 176 234 183

1980 192 182 199 145 123 114 106 103 209 133

1990 190 168 137 165 160 114 87 168 109 128

2000 112 129 136 111 138 167 155

====================================================================================================================================

73b 1913 to 2006 94 years Series 26

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 5 -.28 .14 -.06 -.30 .09 -.06 -.04 -.09 -.28 .15 .29|-.25 -.14 .03 .07 .37\*-.05 -.01 .16 -.13 -.10

[B] Entire series, effect on correlation ( .667) is:

Lower 1957> -.023 1913< -.022 1953> -.012 1954< -.012 1921> -.011 1963< -.010 Higher 1936 .077 1945 .037

1950 to 1979 segment:

Lower 1957> -.090 1954< -.062 1963< -.031 1953> -.022 1964< -.020 1965< -.019 Higher 1968 .178 1955 .047

73b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1913 42 172 176 161 194 258 228

1920 243 307 313 334 440 248 340 386 448 344

1930 289 412 310 284 236 226 61 151 159 263

1940 239 226 231 246 193 87 150 233 142 163

1950 198 215 200 192 153 265 260 254 204 207

1960 196 176 145 103 152 155 151 219 125 185

1970 229 240 184 232 213 290 246 267 325 224

1980 146 155 201 116 87 92 71 68 118 165

1990 142 169 102 120 107 60 65 115 102 95

2000 110 130 102 68 143 130 126

====================================================================================================================================

74a 1918 to 2006 89 years Series 27

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1977 2006 -2 -.31 -.20 .12 .15 .24 .21 -.07 -.25 .24\* .12 .05| - - - - - - - - - -

[B] Entire series, effect on correlation ( .645) is:

Lower 1995> -.032 1991< -.016 1994< -.014 1951< -.014 2003> -.011 1982< -.011 Higher 1925 .052 1945 .023

1977 to 2006 segment:

Lower 1995> -.110 1991< -.070 1994< -.064 1982< -.049 1997< -.042 2003> -.028 Higher 1985 .089 2006 .073

[D] 8 Absent rings: Year Master N series Absent

1999 -.079 40 1 >> WARNING: Ring is not usually narrow

2000 -.119 40 4 >> WARNING: Ring is not usually narrow

2001 -.418 40 1

2002 -.282 40 3 >> WARNING: Ring is not usually narrow

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

74a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1918 225 210

1920 246 167 193 251 228 80 135 263 308 262

1930 170 165 209 184 232 171 83 160 233 283

1940 243 210 242 255 172 73 129 216 113 115

1950 161 102 151 111 198 218 244 145 198 141

1960 171 146 125 139 210 235 161 166 82 105

1970 84 105 97 54 68 67 54 110 120 82

1980 82 42 28 48 29 14 24 6 14 17

1990 9 2 5 12 3 18 17 6 8 0

2000 0 0 0 0 0 0 0

====================================================================================================================================

74b 1915 to 2006 92 years Series 28

[B] Entire series, effect on correlation ( .709) is:

Lower 1976< -.034 1993< -.024 1917> -.011 1948> -.007 1984> -.007 1986> -.007 Higher 1945 .039 1925 .034

[D] 4 Absent rings: Year Master N series Absent

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1976 -5.3 SD

74b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 234 215 273 273 190

1920 235 177 202 237 272 122 197 320 316 349

1930 227 322 307 191 222 222 111 138 187 227

1940 244 250 241 262 272 111 181 255 251 171

1950 133 170 238 165 240 216 224 95 181 121

1960 102 114 107 124 210 150 116 135 78 101

1970 114 138 100 61 55 59 10 92 116 69

1980 80 58 90 73 62 19 58 37 37 31

1990 19 20 12 3 22 13 9 13 17 13

2000 13 8 6 0 0 0 0

====================================================================================================================================

75a 1918 to 2006 89 years Series 29

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1935 1964 3 .08 .46 .12 -.06 .23 .13 -.19 -.41 -.12 -.03 .36|-.27 .10 .53\* .03 -.23 -.20 .00 -.08 .01 -.16

[B] Entire series, effect on correlation ( .557) is:

Lower 1936> -.039 1954< -.018 1949> -.017 1945> -.016 1942< -.015 1962> -.011 Higher 1925 .068 1957 .013

1935 to 1964 segment:

Lower 1954< -.051 1942< -.046 1949> -.039 1962> -.024 1955< -.024 1943< -.015 Higher 1945 .076 1957 .040

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1925 -5.2 SD

75a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1918 233 273

1920 257 197 243 218 254 85 158 223 300 299

1930 216 325 267 272 291 257 229 272 261 291

1940 326 254 186 209 266 192 189 236 253 339

1950 202 219 272 182 149 164 266 130 197 197

1960 203 251 268 220 198 162 157 187 157 205

1970 172 195 170 120 180 168 154 194 245 164

1980 181 175 165 142 75 60 81 99 153 110

1990 110 142 101 166 174 76 95 164 179 101

2000 47 40 34 48 64 137 106

====================================================================================================================================

75b 1925 to 2006 82 years Series 30

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.12 .18 .05 -.12 .00 .25 .14 -.19 -.13 -.15 .42\*-.10 -.12 -.02 .02 .10 .09 -.16 -.20 -.20 -.17

[B] Entire series, effect on correlation ( .545) is:

Lower 1945> -.037 1954< -.013 1969< -.012 1979< -.011 1950< -.008 1942< -.008 Higher 1936 .026 1925 .018

1950 to 1979 segment:

Lower 1954< -.042 1969< -.036 1966> -.020 1963> -.016 1950< -.015 1955< -.015 Higher 1957 .092 1979 .036

75b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1925 75 136 208 328 317

1930 258 301 246 203 195 247 147 206 226 262

1940 361 364 227 305 216 185 174 290 233 216

1950 153 195 225 184 157 173 207 118 142 189

1960 262 309 258 292 260 243 251 225 164 135

1970 153 198 156 166 177 165 152 234 199 80

1980 121 104 131 121 103 29 65 75 108 101

1990 57 123 75 81 109 52 82 138 94 70

2000 36 19 77 77 131 116 87

====================================================================================================================================

76a 1917 to 2006 90 years Series 31

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1965 1994 0 -.13 -.10 -.13 .07 -.12 .02 .14 -.11 .01 -.06 .36\* .01 .07 .00 .09 -.10 .06 -.35 -.29 .24 .26

[B] Entire series, effect on correlation ( .723) is:

Lower 1968> -.034 1970< -.012 1936> -.011 1999< -.007 1972< -.006 1979> -.006 Higher 1945 .040 1925 .037

1965 to 1994 segment:

Lower 1968> -.179 1979> -.026 1972< -.024 1983< -.022 1971< -.020 1970< -.019 Higher 1988 .065 1978 .049

[D] 5 Absent rings: Year Master N series Absent

2002 -.282 40 3 >> WARNING: Ring is not usually narrow

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1968 +3.1 SD

76a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1917 221 248 240

1920 250 170 179 176 205 46 53 245 263 275

1930 153 184 175 137 223 230 133 180 191 199

1940 257 240 251 282 254 122 182 260 182 179

1950 195 214 310 155 258 282 336 241 229 216

1960 197 236 216 203 283 239 175 206 224 160

1970 59 71 49 52 85 66 78 116 153 111

1980 78 92 134 66 47 39 53 62 120 104

1990 62 68 49 43 60 46 48 57 70 20

2000 32 7 0 0 0 0 0

====================================================================================================================================

76b 1917 to 2006 90 years Series 32

[B] Entire series, effect on correlation ( .700) is:

Lower 1936> -.038 1969< -.025 1999< -.013 1963< -.008 1976> -.007 1980< -.007 Higher 1945 .064 1925 .040

[D] 3 Absent rings: Year Master N series Absent

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

76b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1917 182 235 214

1920 249 210 174 178 178 36 92 266 236 271

1930 136 198 214 152 218 250 134 142 140 169

1940 178 241 210 291 184 30 102 173 135 130

1950 160 259 262 160 235 265 284 179 249 178

1960 192 206 168 126 217 183 184 145 120 92

1970 145 133 92 80 112 101 106 127 111 78

1980 49 46 125 67 63 42 61 49 113 92

1990 67 103 83 70 74 46 24 38 66 6

2000 20 5 4 7 0 0 0

====================================================================================================================================

77a 1916 to 2006 91 years Series 33

[B] Entire series, effect on correlation ( .606) is:

Lower 1979< -.054 1921> -.016 1917< -.014 1971< -.009 2006< -.009 2005< -.008 Higher 1945 .042 1985 .010

[D] 4 Absent rings: Year Master N series Absent

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

1979 -6.0 SD

77a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 180 106 220 152

1920 230 262 267 228 244 165 193 266 287 259

1930 222 263 261 243 248 241 138 200 160 203

1940 234 234 230 166 110 46 85 181 71 154

1950 161 112 184 101 187 264 252 138 143 240

1960 236 283 215 167 254 190 169 179 124 182

1970 134 104 159 126 152 139 79 123 111 31

1980 107 72 82 61 67 42 54 46 133 108

1990 76 130 93 87 149 91 90 107 138 72

2000 90 78 26 0 0 0 0

====================================================================================================================================

77b 1916 to 2006 91 years Series 34

[B] Entire series, effect on correlation ( .762) is:

Lower 1958< -.019 1971< -.014 2006< -.010 1932< -.010 2005< -.009 1962> -.009 Higher 1945 .064 1936 .021

[D] 3 Absent rings: Year Master N series Absent

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

77b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1916 169 142 253 274

1920 331 224 292 222 272 175 230 260 307 351

1930 259 348 227 213 246 240 117 170 155 176

1940 206 273 298 321 248 68 155 235 140 172

1950 161 201 243 155 226 248 300 188 138 161

1960 176 197 210 171 189 199 152 183 130 117

1970 136 88 98 80 68 79 65 102 134 73

1980 94 36 47 43 37 16 43 33 126 79

1990 73 88 65 50 87 50 39 69 114 46

2000 55 53 32 3 0 0 0

====================================================================================================================================

78a 1915 to 2006 92 years Series 35

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 9 -.12 .23 .18 -.21 .19 .16 .17 -.41 .00 .09 .32|-.18 -.07 -.12 -.01 -.12 -.11 .15 -.05 .33\*-.01

1965 1994 -1 .03 .06 -.30 .24 .07 .14 -.08 -.13 -.02 .42\* .11|-.05 -.04 -.16 -.01 -.18 .12 .06 -.33 .13 .17

1977 2006 -1 .00 .00 -.25 .04 .09 .26 -.30 -.01 .06 .27\* .12| - - - - - - - - - -

[B] Entire series, effect on correlation ( .561) is:

Lower 1986< -.045 2003> -.023 1968> -.019 1977< -.013 1976> -.010 1957> -.010 Higher 1945 .080 1936 .080

1950 to 1979 segment:

Lower 1968> -.069 1977< -.062 1976> -.040 1970> -.030 1957> -.028 1979> -.028 Higher 1953 .101 1956 .064

1965 to 1994 segment:

Lower 1968> -.058 1977< -.043 1976> -.034 1988< -.029 1979> -.025 1984> -.022 Higher 1991 .071 1994 .052

1977 to 2006 segment:

Lower 2003> -.092 1977< -.035 1979> -.032 1984> -.028 1988< -.023 2006< -.018 Higher 1991 .066 1994 .049

[E] Outliers 1 3.0 SD above or -4.5 SD below mean for year

2003 +3.1 SD

78a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1915 164 377 280 303 339

1920 276 307 460 277 409 254 187 317 454 426

1930 385 654 461 269 333 395 110 360 323 456

1940 478 476 458 344 309 121 160 349 260 280

1950 240 295 345 227 274 320 391 306 317 243

1960 318 307 285 270 359 323 269 245 285 316

1970 302 285 262 245 185 193 223 168 195 187

1980 150 133 155 130 143 109 54 120 87 102

1990 68 164 91 67 114 51 89 73 45 49

2000 34 21 40 48 34 26 15

====================================================================================================================================

78b 1921 to 2006 86 years Series 36

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.34 -.06 .28 .18 .10 .02 .06 -.15 -.18 -.11 .36\* .10 .08 -.31 .13 .03 .10 -.15 -.06 .28 .13

1965 1994 0 -.15 .13 -.02 .14 .10 .18 -.14 -.48 -.26 -.04 .32\* .02 -.06 -.11 .03 .11 .20 -.07 -.12 .25 .24

[B] Entire series, effect on correlation ( .715) is:

Lower 1967< -.030 1984> -.015 1957> -.009 1976> -.009 1949> -.009 1973> -.007 Higher 1936 .074 1945 .043

1950 to 1979 segment:

Lower 1967< -.083 1976> -.033 1973> -.025 1962> -.025 1957> -.024 1952< -.022 Higher 1953 .118 1968 .039

1965 to 1994 segment:

Lower 1967< -.079 1984> -.059 1976> -.037 1973> -.023 1979> -.019 1987> -.017 Higher 1988 .056 1982 .042

78b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1921 318 462 321 501 305 322 411 593 480

1930 385 670 604 418 354 452 105 303 294 453

1940 470 464 489 454 361 140 186 322 273 380

1950 327 261 263 182 317 394 370 305 325 281

1960 297 317 326 276 239 224 151 98 128 257

1970 250 221 258 261 163 130 179 168 200 176

1980 139 120 186 168 181 132 128 145 179 137

1990 104 140 91 92 100 60 86 103 126 98

2000 105 75 83 75 162 184 147

====================================================================================================================================

79a 1928 to 2006 79 years Series 37

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 4 -.35 .08 .27 -.13 -.14 .12 .01 .11 .14 -.01 .32|-.38 -.06 -.05 .41\*-.03 .17 -.05 -.14 .01 .11

1965 1994 0 -.20 -.04 -.22 -.19 .10 -.17 -.20 -.02 .18 .32 .36\*-.12 .05 -.15 -.05 .07 .02 .01 -.08 -.07 .26

1977 2006 0 -.10 .01 -.29 -.36 .18 .02 -.33 .11 -.06 .10 .38\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .555) is:

Lower 1998< -.052 1957> -.034 1943< -.017 1969< -.015 1964< -.010 1977< -.010 Higher 1936 .095 1953 .021

1950 to 1979 segment:

Lower 1957> -.122 1969< -.041 1976> -.035 1964< -.030 1977< -.029 1973> -.017 Higher 1953 .181 1952 .036

1965 to 1994 segment:

Lower 1969< -.065 1977< -.048 1976> -.036 1965< -.015 1973> -.015 1981> -.013 Higher 1985 .127 1988 .032

1977 to 2006 segment:

Lower 1998< -.205 1977< -.041 1981> -.016 2003> -.015 1990> -.012 1979> -.010 Higher 1985 .118 1997 .038

[D] 5 Absent rings: Year Master N series Absent

2000 -.119 40 4 >> WARNING: Ring is not usually narrow

2003 -1.125 40 9

2004 .188 40 11 >> WARNING: Ring is not usually narrow

2005 .745 40 11 >> WARNING: Ring is not usually narrow

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

79a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1928 339 289

1930 266 317 293 230 230 293 187 206 222 221

1940 271 236 226 176 235 157 126 205 177 216

1950 171 203 251 139 180 217 221 243 241 192

1960 181 222 136 131 124 123 114 170 118 90

1970 74 90 110 120 85 109 109 85 93 90

1980 103 103 109 133 85 53 46 72 100 105

1990 98 87 66 73 73 38 35 65 9 8

2000 0 5 5 0 0 0 0

====================================================================================================================================

79b 1921 to 2006 86 years Series 38

[B] Entire series, effect on correlation ( .603) is:

Lower 1936> -.039 1942< -.021 1977< -.010 1972< -.010 2006< -.010 1956< -.008 Higher 1925 .061 1945 .020

[D] 1 Absent rings: Year Master N series Absent

2006 .988 40 15 >> WARNING: Ring is not usually narrow

>> WARNING: Last ring in series is ABSENT

79b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1921 189 218 291 264 72 196 331 356 315

1930 311 353 372 272 287 274 221 241 220 218

1940 270 215 153 196 188 127 114 179 179 126

1950 152 211 308 199 212 178 168 115 212 169

1960 153 225 164 162 179 174 141 153 136 134

1970 139 148 97 108 102 127 77 66 83 65

1980 102 125 141 125 58 10 43 43 58 63

1990 74 102 71 57 75 52 19 87 83 69

2000 79 41 23 5 5 4 0

====================================================================================================================================

80a 1912 to 2006 95 years Series 39

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1977 2006 0 .04 -.28 .00 -.48 -.14 .28 .04 .10 -.19 -.12 .37\* - - - - - - - - - -

[B] Entire series, effect on correlation ( .637) is:

Lower 1974< -.036 1913> -.021 1957> -.020 1997< -.012 2003> -.011 1989< -.010 Higher 1936 .058 1925 .030

1977 to 2006 segment:

Lower 1997< -.075 2003> -.059 1998< -.053 1989< -.053 1985> -.019 1992> -.012 Higher 1984 .055 1994 .051

[D] 3 Absent rings: Year Master N series Absent

2000 -.119 40 4 >> WARNING: Ring is not usually narrow

2002 -.282 40 3 >> WARNING: Ring is not usually narrow

2004 .188 40 11 >> WARNING: Ring is not usually narrow

80a Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1912 238 295 357 329 349 312 360 399

1920 388 242 279 252 330 158 157 250 365 271

1930 229 305 306 207 265 274 117 184 265 330

1940 298 288 236 343 265 147 128 235 212 336

1950 223 236 298 185 257 263 309 284 221 210

1960 216 304 172 189 172 184 170 205 111 176

1970 124 211 147 169 88 125 138 172 150 118

1980 113 121 124 133 66 86 83 77 104 45

1990 65 103 86 111 132 39 16 11 5 9

2000 0 18 0 15 0 19 7

====================================================================================================================================

80b 1911 to 2006 96 years Series 40

[A] Segment High -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 +0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10

--------- ---- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---

1950 1979 0 -.24 .11 .09 -.20 -.09 -.12 .28 -.30 .10 -.23 .42\*-.09 -.01 -.21 .29 .15 .21 -.20 -.35 .27 .18

[B] Entire series, effect on correlation ( .686) is:

Lower 1968> -.024 1911< -.015 1948< -.013 1978< -.010 1980> -.009 1973> -.009 Higher 1936 .045 1925 .031

1950 to 1979 segment:

Lower 1968> -.119 1978< -.047 1973> -.041 1969< -.021 1964< -.016 1960> -.008 Higher 1957 .085 1956 .051

80b Ring measurements

Annual values

Date 0 1 2 3 4 5 6 7 8 9

1911 260 217 230 307 294 291 295 387 350

1920 372 274 324 294 336 166 179 224 228 228

1930 210 282 308 156 174 259 106 135 166 246

1940 233 247 180 197 177 118 139 194 110 167

1950 197 203 229 152 202 188 233 125 148 134

1960 204 196 110 130 128 123 109 130 138 101

1970 83 124 95 141 67 75 79 103 69 70

1980 152 74 86 117 49 18 57 50 108 78

1990 72 105 86 61 80 43 19 67 38 18

2000 26 12 34 30 41 66 92

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PART 7: DESCRIPTIVE STATISTICS: Camel's Hump Mid Corr4-30 15:33 Mon 22 Jan 2007 Page 6

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Corr //-------- Unfiltered --------\\ //---- Filtered -----\\

No. No. No. with Mean Max Std Auto Mean Max Std Auto AR

Seq Series Interval Years Segmt Flags Master msmt msmt dev corr sens value dev corr ()

--- -------- --------- ----- ----- ----- ------ ----- ----- ----- ----- ----- ----- ----- ----- --

1 61a 1919 2006 88 6 3 .696 1.92 4.75 1.233 .731 .379 2.52 .396 -.023 1

2 61b 1919 2006 88 6 1 .734 2.13 6.82 1.468 .745 .430 2.64 .473 -.037 1

3 62a 1910 2006 97 6 0 .589 1.18 3.59 .914 .890 .375 2.34 .354 .003 1

4 62b 1917 2006 90 6 0 .734 1.38 4.25 1.095 .909 .351 2.74 .556 .000 1

5 63a 1915 2006 92 6 2 .659 1.08 3.81 .898 .879 .370 2.54 .362 .030 1

6 63b 1918 2006 89 6 2 .625 1.23 4.48 1.097 .913 .421 2.55 .522 -.033 1

7 64a 1923 2006 84 5 1 .693 1.71 4.69 1.039 .858 .350 2.49 .454 .002 1

8 64b 1921 2006 86 5 1 .473 1.65 4.91 1.091 .868 .403 2.68 .497 -.080 1

9 65a 1928 2006 79 5 3 .644 1.83 4.75 1.110 .843 .271 2.60 .404 .027 2

10 65b 1915 2006 92 6 0 .761 1.78 4.44 1.088 .846 .333 2.35 .371 .021 1

11 66a 1926 2006 81 5 3 .621 1.72 4.51 1.017 .856 .317 2.50 .415 .002 1

12 66b 1913 2006 94 6 0 .675 1.42 3.71 .987 .770 .384 2.64 .458 -.080 1

13 67a 1916 2006 91 6 2 .526 1.62 4.53 1.126 .903 .320 2.72 .433 -.007 1

14 67b 1916 2006 91 6 2 .493 1.40 4.42 1.172 .882 .436 2.79 .433 .017 1

15 68a 1916 2006 91 6 0 .763 1.70 3.34 .673 .741 .226 2.67 .403 .039 1

16 68b 1920 2006 87 5 0 .787 1.65 3.09 .582 .712 .213 2.61 .450 .030 1

17 69a 1919 2006 88 6 2 .703 1.26 2.94 .624 .716 .330 2.62 .427 -.017 2

18 69b 1924 2006 83 5 0 .737 1.46 3.53 .713 .644 .353 2.51 .381 .013 1

19 70a 1915 2006 92 6 0 .631 1.52 6.49 1.462 .923 .305 2.55 .522 .029 1

20 70b 1912 2006 95 6 1 .664 1.50 5.79 1.323 .931 .358 2.68 .561 .026 1

21 71a 1916 2006 91 6 0 .542 1.26 3.85 1.081 .899 .387 2.77 .457 -.090 1

22 71b 1915 2006 92 6 2 .548 1.27 3.77 .866 .801 .385 2.56 .446 .040 1

23 72a 1918 2006 89 6 1 .760 1.57 3.13 .620 .567 .294 2.53 .471 -.006 2

24 72b 1920 2006 87 5 0 .770 1.54 3.59 .805 .704 .358 2.48 .378 .016 1

25 73a 1914 2006 93 6 0 .713 1.66 2.92 .528 .511 .269 2.63 .394 .059 1

26 73b 1913 2006 94 6 1 .667 1.94 4.48 .866 .762 .251 2.45 .411 -.018 1

27 74a 1918 2006 89 6 1 .645 1.20 3.08 .888 .850 .383 2.82 .400 .006 1

28 74b 1915 2006 92 6 0 .709 1.36 3.49 .971 .853 .351 2.71 .487 -.033 1

29 75a 1918 2006 89 6 1 .557 1.87 3.39 .716 .715 .248 2.43 .333 .026 1

30 75b 1925 2006 82 5 1 .545 1.72 3.64 .812 .793 .293 2.57 .427 .008 1

31 76a 1917 2006 90 6 1 .723 1.48 3.36 .894 .815 .297 2.50 .427 .024 1

32 76b 1917 2006 90 6 0 .700 1.36 2.91 .792 .759 .369 2.43 .401 .064 1

33 77a 1916 2006 91 6 0 .606 1.50 2.87 .760 .758 .336 2.42 .394 -.039 1

34 77b 1916 2006 91 6 0 .762 1.52 3.51 .919 .827 .334 2.63 .415 -.021 1

35 78a 1915 2006 92 6 3 .561 2.41 6.54 1.338 .772 .295 2.66 .495 .018 1

36 78b 1921 2006 86 5 2 .715 2.56 6.70 1.397 .785 .254 2.48 .423 .038 1

37 79a 1928 2006 79 5 3 .555 1.40 3.39 .864 .905 .273 2.56 .548 .041 1

38 79b 1921 2006 86 5 0 .603 1.50 3.72 .911 .857 .311 2.63 .380 .040 1

39 80a 1912 2006 95 6 1 .637 1.86 3.99 1.066 .830 .398 2.60 .538 -.001 1

40 80b 1911 2006 96 6 1 .686 1.54 3.87 .909 .844 .311 2.70 .572 .029 1

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Total or mean: 3572 229 41 .655 1.59 6.82 .969 .804 .334 2.82 .442 .004

- = [ COFECHA CH\_M COF ] = -