[] Dendrochronology Program Library Run FINAL Program COF 13:13 Mon 17 Jun 2013 Page 1

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[] P R O G R A M C O F E C H A Version 6.06P 28659

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QUALITY CONTROL AND DATING CHECK OF TREE-RING MEASUREMENTS

Title of run: Final

File of DATED series: USPHigh\_PCRU\_Final

CONTENTS:

Part 1: Title page, options selected, summary, absent rings by series

Part 2: Histogram of time spans

Part 3: Master series with sample depth and absent rings by year

Part 4: Bar plot of Master Dating Series

Part 5: Correlation by segment of each series with Master

Part 6: Potential problems: low correlation, divergent year-to-year changes, absent rings, outliers

Part 7: Descriptive statistics

RUN CONTROL OPTIONS SELECTED VALUE

1 Cubic smoothing spline 50% wavelength cutoff for filtering

32 years

2 Segments examined are 50 years lagged successively by 25 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 .3281

6 Master dating series saved N

7 Ring measurements listed N

8 Parts printed 1234567

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

Time span of Master dating series is 1837 to 2012 176 years

Continuous time span is 1837 to 2012 176 years

Portion with two or more series is 1890 to 2012 123 years

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*C\* Number of dated series 22 \*C\*

\*O\* Master series 1837 2012 176 yrs \*O\*

\*F\* Total rings in all series 1730 \*F\*

\*E\* Total dated rings checked 1677 \*E\*

\*C\* Series intercorrelation .562 \*C\*

\*H\* Average mean sensitivity .235 \*H\*

\*A\* Segments, possible problems 1 \*A\*

\*\*\* Mean length of series 78.6 \*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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

681B 1 absent rings: 2004

686A 1 absent rings: 2004

2 absent rings .116%

PART 2: TIME PLOT OF TREE-RING SERIES: Final 13:13 Mon 17 Jun 2013 Page 2

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1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050 Ident Seq Time-span Yrs

: : : : : : : : : : : : : : : : : : : : : -------- --- ---- ---- ----

. . . . . . . . . . . . . . . . . . <======> . 674A 1 1940 2012 73

. . . . . . . . . . . . . . . . . . <=====> . 674B 2 1956 2012 57

. . . . . . . . . . . . . . . . . . .<====> . 675A 3 1961 2012 52

. . . . . . . . . . . . . . . . . . <======> . 675B 4 1949 2012 64

. . . . . . . . . . . . . . . . . . <=====> . 676A 5 1951 2012 62

. . . . . . . . . . . . . . . . . . <=====> . 676B 6 1953 2012 60

. . . . . . . . . . . . . . . . . . <=====> . 677A 7 1951 2012 62

. . . . . . . . . . . . . . . . . . <======> . 677B 8 1949 2012 64

. . . . . . . . . . . . . . . . . . <======> . 678A 9 1948 2012 65

. . . . . . . . . . . . . . . . . . <======> . 678B 10 1949 2012 64

. . . . . . . . . . . . . . . . . . .<====> . 679B 11 1966 2012 47

. . . . . . . . . . . . . . . . . <==========> . 680A 12 1904 2012 109

. . . . . . . . . . . . . . . . . <===========> . 680B 13 1890 2012 123

. . . . . . . . . . . . . . . . . <===========> . 681A 14 1899 2012 114

. . . . . . . . . . . . . . . . <=================> . 681B 15 1837 2012 176

. . . . . . . . . . . . . . . . . . <========> . 682A 16 1926 2012 87

. . . . . . . . . . . . . . . . . . <======> . 682B 17 1949 2012 64

. . . . . . . . . . . . . . . . . . <======> . 683A 18 1948 2012 65

. . . . . . . . . . . . . . . . . . <======> . 684A 19 1947 2012 66

. . . . . . . . . . . . . . . . . . <=====> . 684B 20 1958 2012 55

. . . . . . . . . . . . . . . . . <==========> . 686A 21 1908 2012 105

. . . . . . . . . . . . . . . . . .<=========> . 686B 22 1917 2012 96

: : : : : : : : : : : : : : : : : : : : :

1050 1100 1150 1200 1250 1300 1350 1400 1450 1500 1550 1600 1650 1700 1750 1800 1850 1900 1950 2000 2050

PART 3: Master Dating Series: Final 13:13 Mon 17 Jun 2013 Page 3

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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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1850 -1.352 1 1900 .285 3 1950 -.746 15 2000 .311 22

1851 -.979 1 1901 .685 3 1951 .626 17 2001 .917 22

1852 -1.357 1 1902 -1.024 3 1952 .139 17 2002 .389 22

1853 -1.903 1 1903 .607 3 1953 .339 18 2003 -1.569 22

1854 -1.075 1 1904 1.447 4 1954 .542 18 2004 -2.105 22 2

1855 -1.026 1 1905 -.302 4 1955 .861 18 2005 -1.960 22

1856 -.712 1 1906 .985 4 1956 -1.810 19 2006 -.658 22

1857 .191 1 1907 -1.354 4 1957 .711 19 2007 .230 22

1858 .790 1 1908 .107 5 1958 1.205 20 2008 -.210 22

1859 .547 1 1909 -1.123 5 1959 .824 20 2009 .903 22

1860 -1.968 1 1910 -.066 5 1960 -.212 20 2010 .848 22

1861 -.161 1 1911 -2.105 5 1961 .812 21 2011 -.114 22

1862 2.683 1 1912 .082 5 1962 -.580 21 2012 1.060 22

1863 1.806 1 1913 1.541 5 1963 .042 21

1864 .933 1 1914 .197 5 1964 .636 21

1865 .458 1 1915 -.198 5 1965 .205 21

1866 .605 1 1916 1.014 5 1966 -.881 22

1867 1.017 1 1917 -.565 6 1967 -1.083 22

1868 .942 1 1918 -.221 6 1968 -.873 22

1869 .148 1 1919 .714 6 1969 -.518 22

1870 .071 1 1920 .112 6 1970 .692 22

1871 1.131 1 1921 1.370 6 1971 1.794 22

1872 2.105 1 1922 -.575 6 1972 .710 22

1873 1.399 1 1923 -.440 6 1973 -.469 22

1874 .612 1 1924 .907 6 1974 -.736 22

1875 .769 1 1925 -.946 6 1975 .889 22

1876 .348 1 1926 .477 7 1976 -.232 22

1877 .101 1 1927 .382 7 1977 .071 22

1878 -1.048 1 1928 .442 7 1978 -.740 22

1879 -1.650 1 1929 -.138 7 1979 -.835 22

1880 -.912 1 1930 -.369 7 1980 .577 22

1881 -.476 1 1931 -.072 7 1981 -.926 22

1882 -.689 1 1932 .133 7 1982 -1.331 22

1883 -.603 1 1933 .480 7 1983 -.306 22

1884 -2.700 1 1934 1.015 7 1984 -1.202 22

1885 -2.387 1 1935 -1.864 7 1985 -.442 22

1886 -.013 1 1936 -.629 7 1986 -.259 22

1837 -1.746 1 1887 -.376 1 1937 .513 7 1987 1.049 22

1838 1.164 1 1888 -3.638 1 1938 .282 7 1988 1.173 22

1839 .840 1 1889 1.389 1 1939 1.067 7 1989 -.309 22

1840 -.783 1 1890 -1.427 2 1940 -1.616 8 1990 -.181 22

1841 -.507 1 1891 -.743 2 1941 .211 8 1991 .268 22

1842 -.568 1 1892 1.891 2 1942 -.241 8 1992 .888 22

1843 .440 1 1893 .851 2 1943 -.228 8 1993 .576 22

1844 .332 1 1894 1.039 2 1944 -.067 8 1994 .050 22

1845 1.588 1 1895 -.095 2 1945 -1.001 8 1995 1.009 22

1846 2.456 1 1896 .889 2 1946 -.653 8 1996 -.237 22

1847 .989 1 1897 .190 2 1947 .176 9 1997 -.134 22

1848 .398 1 1898 .042 2 1948 -.583 11 1998 .128 22

1849 -.025 1 1899 .281 3 1949 -.184 15 1999 .997 22

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PART 4: Master Bar Plot: Final 13:13 Mon 17 Jun 2013 Page 4

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Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value Year Rel value

1850-e 1900------A 1950--c 2000------A

1851-d 1901-------C 1951-------C 2001---------D

1852-e 1902-d 1952-----A 2002------B

1853h 1903-------B 1953------A 2003f

1854-d 1904----------F 1954-------B 2004h

1855-d 1905---a 1955--------C 2005h

1856--c 1906---------D 1956g 2006--c

1857-----A 1907-e 1957--------C 2007------A

1858--------C 1908-----@ 1958---------E 2008----a

1859-------B 1909-d 1959--------C 2009--------D

1860h 1910----@ 1960----a 2010--------C

1861----a 1911h 1961--------C 2011----@

1862----------K 1912-----@ 1962--b 2012---------D

1863----------G 1913----------F 1963-----@

1864---------D 1914------A 1964-------C

1865-------B 1915----a 1965------A

1866-------B 1916---------D 1966-d

1867---------D 1917--b 1967-d

1868---------D 1918----a 1968-c

1869-----A 1919--------C 1969---b

1870-----@ 1920-----@ 1970--------C

1871---------E 1921----------E 1971----------G

1872----------H 1922--b 1972--------C

1873----------F 1923---b 1973---b

1874-------B 1924--------D 1974--c

1875--------C 1925-d 1975--------D

1876------A 1926-------B 1976----a

1877-----@ 1927------B 1977-----@

1878-d 1928-------B 1978--c

1879g 1929----a 1979--c

1880-d 1930---a 1980-------B

1881---b 1931----@ 1981-d

1882--c 1932-----A 1982-e

1883--b 1933-------B 1983---a

1884k 1934---------D 1984-e

1885j 1935g 1985---b

1886-----@ 1936--c 1986----a

1837g 1887---b 1937-------B 1987---------D

1838---------E 1888o 1938------A 1988---------E

1839--------C 1889----------F 1939---------D 1989---a

1840--c 1890-f 1940f 1990----a

1841---b 1891--c 1941------A 1991------A

1842--b 1892----------H 1942----a 1992--------D

1843-------B 1893--------C 1943----a 1993-------B

1844------A 1894---------D 1944----@ 1994-----@

1845----------F 1895----@ 1945-d 1995---------D

1846----------J 1896--------D 1946--c 1996----a

1847---------D 1897-----A 1947-----A 1997----a

1848------B 1898-----@ 1948--b 1998-----A

1849-----@ 1899------A 1949----a 1999---------D

PART 5: CORRELATION OF SERIES BY SEGMENTS: Final 13:13 Mon 17 Jun 2013 Page 5

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Correlations of 50-year dated segments, lagged 25 years

Flags: A = correlation under .3281 but highest as dated; B = correlation higher at other than dated position

Seq Series Time\_span 1875 1900 1925 1950 1975

1924 1949 1974 1999 2024

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

1 674A 1940 2012 .30A .52 .70

2 674B 1956 2012 .66 .64

3 675A 1961 2012 .70 .71

4 675B 1949 2012 .51 .52 .54

5 676A 1951 2012 .72 .58

6 676B 1953 2012 .70 .70

7 677A 1951 2012 .64 .77

8 677B 1949 2012 .58 .59 .54

9 678A 1948 2012 .50 .51 .70

10 678B 1949 2012 .71 .73 .67

11 679B 1966 2012 .41

12 680A 1904 2012 .58 .53 .52 .51

13 680B 1890 2012 .58 .55 .52 .49 .54

14 681A 1899 2012 .51 .52 .82 .67 .63

15 681B 1837 2012 .38 .44 .67 .57 .47

16 682A 1926 2012 .37 .49 .48

17 682B 1949 2012 .50 .55 .55

18 683A 1948 2012 .64 .61 .45

19 684A 1947 2012 .47 .53 .51

20 684B 1958 2012 .57 .55

21 686A 1908 2012 .55 .58 .60 .51

22 686B 1917 2012 .49 .61 .59 .68

Av segment correlation .49 .52 .55 .59 .59

PART 6: POTENTIAL PROBLEMS: Final 13:13 Mon 17 Jun 2013 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 50-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

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674A 1940 to 2012 73 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

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

1940 1989 0 .14 -.18 .09 -.01 .05 -.17 -.03 .04 .26 -.24 .30\*-.23 -.05 -.07 .21 -.14 -.04 .08 .13 -.01 .08

[B] Entire series, effect on correlation ( .427) is:

Lower 1940> -.114 1958< -.093 1942< -.031 1970< -.029 1990< -.014 1950> -.010 Higher 1956 .073 2003 .030

1940 to 1989 segment:

Lower 1940> -.135 1958< -.124 1942< -.039 1970< -.039 1950> -.011 1967> -.008 Higher 1956 .125 1971 .041

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

1940 +4.4 SD; 1958 -6.1 SD

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674B 1956 to 2012 57 years Series 2

[B] Entire series, effect on correlation ( .657) is:

Lower 1969< -.083 1956> -.013 2011> -.013 1978> -.012 1967> -.011 1984> -.010 Higher 2003 .039 1971 .013

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675A 1961 to 2012 52 years Series 3

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

Lower 1996< -.024 1989> -.019 2008< -.017 1961< -.011 1980< -.009 1979> -.008 Higher 1981 .014 1984 .013

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675B 1949 to 2012 64 years Series 4

[B] Entire series, effect on correlation ( .506) is:

Lower 1953< -.102 2010< -.028 1967> -.019 1969> -.014 2005> -.014 2007< -.013 Higher 1956 .042 2004 .015

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

1968 +3.3 SD; 1969 +3.6 SD

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676A 1951 to 2012 62 years Series 5

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

Lower 1984> -.041 2004> -.033 1959< -.013 2007< -.011 2003> -.009 1978> -.007 Higher 1956 .078 1971 .011

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1956 -5.7 SD; 1984 +3.8 SD; 1985 +3.3 SD

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676B 1953 to 2012 60 years Series 6

[B] Entire series, effect on correlation ( .708) is:

Lower 1960< -.037 1978> -.025 1962> -.019 2003> -.019 1994< -.015 1998< -.014 Higher 1956 .061 1981 .011

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

1978 +3.2 SD

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677A 1951 to 2012 62 years Series 7

[B] Entire series, effect on correlation ( .710) is:

Lower 1955< -.043 1969< -.014 1989> -.011 1997< -.010 1978< -.006 1960> -.005 Higher 2003 .032 2004 .018

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

1964 +3.8 SD

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677B 1949 to 2012 64 years Series 8

[B] Entire series, effect on correlation ( .604) is:

Lower 1973< -.063 1984> -.025 1952< -.019 1976> -.013 1996> -.013 1950> -.012 Higher 1956 .058 2003 .012

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

1973 -5.1 SD; 1984 +3.0 SD

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678A 1948 to 2012 65 years Series 9

[B] Entire series, effect on correlation ( .587) is:

Lower 1953< -.045 1961< -.024 1989> -.022 1984> -.015 1988< -.015 1952> -.014 Higher 2004 .026 1981 .015

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

1991 +3.1 SD

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678B 1949 to 2012 64 years Series 10

[B] Entire series, effect on correlation ( .702) is:

Lower 1984< -.045 1952> -.014 2000< -.013 1973> -.011 2011> -.008 1949< -.006 Higher 1956 .039 1957 .010

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679B 1966 to 2012 47 years Series 11

[B] Entire series, effect on correlation ( .409) is:

Lower 2005> -.043 2004> -.025 1967< -.024 1990< -.024 1966> -.023 1996> -.017 Higher 2003 .051 1971 .032

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

2005 +4.6 SD

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680A 1904 to 2012 109 years Series 12

[B] Entire series, effect on correlation ( .563) is:

Lower 1940> -.031 1964< -.010 1969> -.009 1993< -.008 1996> -.007 1976> -.007 Higher 1935 .025 1971 .011

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680B 1890 to 2012 123 years Series 13

[B] Entire series, effect on correlation ( .532) is:

Lower 1901< -.015 1900> -.014 1936< -.013 1996> -.012 1962> -.011 1945> -.010 Higher 1935 .036 1911 .028

[E] Outliers 6 3.0 SD above or -4.5 SD below mean for year

1900 +4.4 SD; 1945 +3.4 SD; 1947 +3.2 SD; 1962 +3.0 SD; 1996 +3.1 SD; 2006 +3.9 SD

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

681A 1899 to 2012 114 years Series 14

[B] Entire series, effect on correlation ( .578) is:

Lower 1918< -.041 1907> -.035 1900< -.016 1985< -.011 1913< -.010 1905> -.009 Higher 1940 .037 1956 .030

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1907 +3.9 SD; 1918 -5.9 SD; 1937 +3.3 SD

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681B 1837 to 2012 176 years Series 15

[\*] Early part of series cannot be checked from 1837 to 1889 -- not matched by another series

[B] Entire series, effect on correlation ( .500) is:

Lower 1911> -.052 1907< -.035 1912< -.030 1932< -.025 1951< -.007 1914> -.007 Higher 1940 .038 1935 .025

[C] Year-to-year changes diverging by over 4.0 std deviations:

1911 1912 -4.7 SD

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

2004 -2.105 22 2

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1907 -5.2 SD; 1911 +5.0 SD; 2004 -4.9 SD

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682A 1926 to 2012 87 years Series 16

[B] Entire series, effect on correlation ( .427) is:

Lower 1952< -.029 1970< -.019 1975< -.015 1937< -.014 2005> -.014 1981> -.014 Higher 2003 .044 1956 .022

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1948 +3.4 SD; 1982 +3.5 SD; 2006 +4.9 SD

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682B 1949 to 2012 64 years Series 17

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

Lower 1949< -.034 1982> -.029 2004> -.019 2006< -.018 1956> -.017 1972< -.015 Higher 2003 .053 1987 .014

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

1982 +3.2 SD

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683A 1948 to 2012 65 years Series 18

[B] Entire series, effect on correlation ( .574) is:

Lower 1966> -.046 2004> -.022 1954< -.020 1998< -.018 1980< -.018 1952< -.013 Higher 1956 .121 1975 .011

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

1966 +3.9 SD; 2001 +3.2 SD

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684A 1947 to 2012 66 years Series 19

[B] Entire series, effect on correlation ( .432) is:

Lower 2011< -.063 1947< -.030 1955< -.020 1960> -.014 1991< -.013 1982> -.013 Higher 1966 .019 1984 .017

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1953 +3.2 SD; 1980 +3.2 SD; 2011 -5.1 SD

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684B 1958 to 2012 55 years Series 20

[B] Entire series, effect on correlation ( .588) is:

Lower 1984> -.050 1966> -.032 1982> -.015 1981> -.011 1963< -.011 2011> -.011 Higher 2004 .034 1962 .017

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

1983 +3.7 SD; 1984 +4.5 SD

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686A 1908 to 2012 105 years Series 21

[B] Entire series, effect on correlation ( .540) is:

Lower 1926< -.025 1914< -.019 1925> -.019 1917> -.012 1918> -.011 1931< -.010 Higher 1940 .032 1935 .019

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

2004 -2.105 22 2

[E] Outliers 3 3.0 SD above or -4.5 SD below mean for year

1918 +3.8 SD; 1925 +3.5 SD; 1960 +3.2 SD

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686B 1917 to 2012 96 years Series 22

[B] Entire series, effect on correlation ( .567) is:

Lower 1919< -.028 1918> -.022 1960> -.016 1917> -.015 1942> -.015 1987< -.013 Higher 1940 .062 2003 .020

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

1918 +4.6 SD

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PART 7: DESCRIPTIVE STATISTICS: Final 13:13 Mon 17 Jun 2013 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 674A 1940 2012 73 3 1 .427 1.09 2.42 .429 .678 .274 2.79 .596 .053 1

2 674B 1956 2012 57 2 0 .657 1.09 2.51 .443 .768 .221 2.56 .527 .004 1

3 675A 1961 2012 52 2 0 .713 1.47 3.17 .643 .877 .196 2.76 .614 .005 1

4 675B 1949 2012 64 3 0 .506 1.71 3.61 .856 .913 .187 2.75 .505 .026 1

5 676A 1951 2012 62 2 0 .675 1.26 2.74 .487 .805 .210 2.36 .357 -.091 3

6 676B 1953 2012 60 2 0 .708 1.60 2.84 .566 .750 .219 2.55 .594 -.031 1

7 677A 1951 2012 62 2 0 .710 1.76 3.62 .632 .804 .176 2.84 .611 .148 1

8 677B 1949 2012 64 3 0 .604 1.62 4.78 .653 .794 .185 2.46 .456 .006 1

9 678A 1948 2012 65 3 0 .587 1.40 3.04 .648 .778 .240 2.94 .642 .166 1

10 678B 1949 2012 64 3 0 .702 1.06 2.29 .462 .796 .227 2.52 .449 -.058 1

11 679B 1966 2012 47 1 0 .409 2.41 3.43 .538 .380 .217 2.52 .510 .003 1

12 680A 1904 2012 109 4 0 .563 1.38 4.09 .905 .916 .231 2.49 .380 -.092 1

13 680B 1890 2012 123 5 0 .532 1.73 4.53 1.192 .936 .211 2.66 .486 .009 1

14 681A 1899 2012 114 5 0 .578 1.18 3.94 .856 .924 .224 2.59 .436 .016 1

15 681B 1837 2012 176 5 0 .500 1.03 3.75 .843 .866 .290 2.70 .364 -.079 2

16 682A 1926 2012 87 3 0 .427 .99 2.70 .727 .916 .227 2.68 .442 .034 1

17 682B 1949 2012 64 3 0 .548 1.63 3.79 .769 .846 .172 2.74 .561 .043 1

18 683A 1948 2012 65 3 0 .574 1.47 2.99 .672 .845 .170 2.57 .364 -.095 2

19 684A 1947 2012 66 3 0 .432 1.72 2.93 .422 .548 .177 2.55 .424 -.071 2

20 684B 1958 2012 55 2 0 .588 1.53 3.88 .684 .761 .228 2.71 .610 .044 1

21 686A 1908 2012 105 4 0 .540 1.15 3.59 .789 .856 .370 2.40 .304 -.113 1

22 686B 1917 2012 96 4 0 .567 1.14 3.05 .666 .819 .303 2.59 .392 .015 1

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Total or mean: 1730 67 1 .562 1.37 4.78 .721 .821 .235 2.94 .463 -.011

- = [ COFECHA FINALCOF ] = -