

NAME

calentool - day/week/month/year-at-a-glance calendar for XView/Open Look (the Hacker's Almanac)

SYNOPSIS

```
calentool [ -b ] [ -B ] [ -d date ] [ -f apptsfile ] [ -h [ A|a|c|i|l|j|s ] ] [ -H [ A|a|c|i|l|j|s ] ] [ -I { d|w|m|y } ]
[ -i ] [ -l [ 0|1 ] ] [ { -m | -M } userid ] [ -o ] [ { -p | -P } { d|w|W|m } ] [ -r ] [ -t ] [ -u int ] [ -w ] [ -z ] [
-5 ] [ -6 ] [ [ -7 ] [ -12 ] [ -24 ] [ -D style ] [ -e ] [ -E ] [ -T printdev ] [ -s starthour ] [ -S stophour ] [
-N int ] [ -x int ] [ xview options ]
```

DESCRIPTION

Calentool is a day/week/month/year-at-a-glance tool. It is a window-based calendar; the only time you should have to type is when entering the text for an appointment. *Calentool* provides for both one-time and recurring appointments, as well as notes (appointments or reminders with no associated time). A period of advance warning can be specified. A visual warning (and optional auditory bell) are produced at the approach of a scheduled appointment.

By employing appropriate options, this tool can be used to send reminders of appointments by *mail*(1), and to examine colleagues appointment schedules. Daily, weekly and monthly schedules can be sent to a POSTSCRIPT® printer. Outdated appointments can be sent automatically to an archival file. An extensive set of files containing commemorative dates is included, as well as a library of routines which computes the dates of various holidays which do not fall on fixed days of the Gregorian calendar (including religious holidays and astronomical events). Lunar and solar almanacs are also included.

Although to take full advantage of *calentool* you should be operating within the X11 or XNeWs environment, the **-m**, **-M**, **-p**, **-P**, and **-T** options allow the Hacker's Almanac to be employed even from ordinary terminals. The accompanying utilities *cal2ct*(1L), *month2ct*(1L), and *mt2ct*(1L), transform appointment files in *calendar*(1), *month*(1L), and *monthtool*(1L) formats to *calentool* format.

Instructions appear in the section DETAILED INSTRUCTIONS, which follows the OPTIONS section.

OPTIONS

Calentool accepts standard *xview* command line options at the end of the command line. As well as the X11 options **-fg**, **-bg**, and **-geometry**. In addition, most options are also settable in the *.Xdefaults* file.

- b** When an appointment is pending, a bell character (along with the appointment message) is sent to the console; only one reminder is sent for each appointment. Also, place a copy of the appointment text in the file *\$HOME/msgfile*. The text in this file is displayed by the screen lock program *xnlock*(1L); notifying passers-by of the user's current activity.
- B** Similar to **-b** except that the *calentool* window is opened instead of writing to the console. If both features are desired, both options may be specified.
- d date** Open the calendar at the day *date*, which may take on several formats:
 - day of current week:
 - Tue, Th, fr, MONDAY
 - numeric dates:
 - DD (day DD of current month, for example 27 for the 27th of this month)
 - MO/DD (day DD of month MO, for example 11/12 for November 12)
 - MO/DD/YY (day DD of month MO, year YY, for example 9/1/88 for 1 September 1988). (If the **-e** or **-E** options are used, the date format is DD/MO and DD/MO/YY. If the **-D2** option is used, the date format is MO-DD and YY-MM-DD.)
 - relative dates:
 - +n (n days from now, for example +1 for tomorrow)
 - n (n days ago, for example -1 for yesterday)
- D style** Set the date formatting style. The default (**-D 0**) specifies typical U.S. usage, with dates formatted as MM/DD/YY. Style 1 is the typical (?) European usage, with dates

- formatted as DD/MM/YY. Style 2 is the ISO standard (?) format, also used in Sweden, with dates formatted as YY-MM-DD. This option overrides the -E option.
- e** Set European (ISO) week display format (Monday through Sunday). When 7 day week display is set, the display shows the days Monday through Sunday, rather than Sunday through Saturday. This also affects the month and year displays. With this option the weeks are numbered according to ISO standard.
- E** Set all European style options. Currently, this includes: **-24**, **-D 2** and **-e**.
- f *apptsfile*** Use *apptsfile* as the appointments file. This is useful for seeing if other people on the net are free to attend a meeting. If everyone exports his appointments file (in a NFS environment) then people can plan appointments more effectively.
- File integrity can NOT be assured when this option is in use; if two people try to write to the same appointments file at the same time, the result could be tragic. Only the person whose schedule is described by a particular appointments file should have write permission for that file.
- h *char*** Compute and display holidays which do not fall on set dates of the Gregorian calendar. Notes appear in the day and week displays, and marks appear in the month and year displays. This option is followed by a single character which indicates which set of holidays is to be computed (the option can be invoked multiple times on the command line). The character codes for supported date sets are:
- A** Use all available date sets. When this option is chosen, the time required to produce a new display increases. It becomes long for the month display and extremely long for the year display.
 - a** Astronomical events (solstices and equinoxes).
 - c** Christian religious holidays. These dates may be inaccurate for years prior to the advent of the Gregorian calendar in 1582.
 - i** Islamic religious holidays. There are different conventions used by Muslim countries to determine the dates in the Islamic calendar; the dates computed here may differ by 1-2 days from the locally determined date.
 - l** Lunar calendar (Chinese/Oriental) holidays (not yet implemented).
 - j** Jewish religious holidays. These may not be accurate for years after 2000. Also note that until recent centuries, the Jewish calendar was regulated (like the modern Islamic calendar) by sightings of the crescent Moon, so that dates for previous years must be interpreted with caution.
 - s** US Secular holidays.
- H *char*** Identical to the **-h** option, except that computed dates are displayed only in the day and week displays; the month and year displays are not marked for these dates.
- I *char*** Set the initial display state when the tool is first started. The *d*, *w*, *m*, *y* modifiers start the tool displaying the current day, week, month or year, respectively.
- i** Include all outdated appointments files (files named *.appointments.yy*, where *yy* represents the last two digits of the appointment's year).
- l *int*** Set limit check for appointments. If *int* is 0 or missing, then only the appointment time slots are checked when determining whether to show a "no appointments" icon or a standard icon. When *int* is 1, the notes are also included in the check.
- m *userid***
-M *userid* Send mail listing today's appointments to the user specified by *userid* and exit. **-m** shows all notes, while **-M** does not show notes not marked for display in the month/year displays. This feature is useful when *calentool* is run from *cron(1)*, to send yourself mail about today's appointments. No mail is sent about today's appointments, if there are

- none. The **-p** and **-P** options may be used with these options to mail yourself a whole weeks worth of appointments, e.g.: *calentool -Pw -m billr*. By default, the output generated by the **-[mM]** command is in ASCII. By using the **-T** option, a different output format (e.g. POSTSCRIPT®) may be chosen. Month output is in POSTSCRIPT® only.
- N int** Set the number of noteslots displayed to *int* slots. This is useful if you increase the number of timeslots used and want to keep the overall display size down.
- o** Save outdated appointments to an outdated appointments file (e.g., a file named *.appointments.yy*, where *yy* represents the last two digits of the appointments year). An appointment is considered outdated at the beginning of the next year or, if the **-xn** option is specified, *n* days after the appointment.
- p char**
-P char Print today's appointments and exit. This is useful for reviewing appointments from an ordinary terminal or *shelltool(1)*. The *d*, *w*, *W*, *m* modifiers select a printout of the current day, week, week or month, respectively. The *w* option prints a weeks worth starting at the beginning of the current week. *W* prints a weeks worth starting at the current day. **-p** shows all notes, while **-P** does not show notes not marked for display in the month/year displays. No printout is provided of the current day's appointments, if there are none. By default, the output generated by the **-[pP]** command is in ASCII, except for month printouts where the default is POSTSCRIPT®. By using the **-T** option, a different output format (e.g. POSTSCRIPT®) may be chosen. Month output is in POSTSCRIPT® only.
- r** Open the calendar tool in read-only mode. Appointments can be edited, but no changes will be saved. The tool's banner strip will contain the string "[Read Only]". This is particularly useful for inspecting other users' appointment files with the **-f** option.
- s starthour** Set the start hour for the day and week displays to *starthour* hour (0 to 23).
- S stophour** Set the stop (end) hour for the day and week displays to *stophour* hour (1 to 24). The end hour must be greater than the start hour. If the start stop span is large, you should change the default font to a smaller size font. This can be done with the **-Wt** SunView window option or by setting it explicitly in the defaults file (see below).
- t** Display the current time below the *calentool* icon (no further need for *clocktool(1)*).
- T device** Use *device* as the output format for printing or mailing appointments. The default is ASCII. The only currently supported option for *device* is **ps** or **psc** which specifies POSTSCRIPT® output instead.
- u int** Update the time at the interval of *int* seconds.
- w** Display the "Working!" message in the control panel during lengthy operations. The cursor also changes to an hourglass.
- x int** Expire (delete) appointment file entries if they are older than *int* days old. If **-o** is set, entries are moved from the appointments file to the outdated appointments file. Appointments in *#include* files and read only appointments are not expired. To expire included appointments, *calentool* must be run on the included file directly.
- z** Convert appointments file used by earlier (pre 2.0) versions of *calentool* to the format used by the current version. This option should be invoked only once, the first time an old format file is read by *calentool*.
- 5** Display only five days (Monday through Friday) in the week display. This is useful if the installer has set the default display format to 6 or 7 days.
- 6** Display six days (Monday through Saturday) in the week display. This is useful if the installer has set the default display format to 5 or 7 days.

- 7 Display all seven days in the week display. This is useful if the installer has set the default value to 5 or 6 days. Sunday through Saturday is the standard format. Using the **-e** or **-E** options displays a Monday through Sunday format. The 7-day display is wider than the 5-day display, allowing longer messages to be displayed on the day page.
- 12 Display time in a 12-hour AM/PM format whenever practical. This is useful if the installer has set the default time format to 24-hour time.
- 24 Display time in a 24-hour format. This is useful if the installer has set the default time format to 12-hour time.

DETAILED INSTRUCTIONS

Help is available for most buttons, message items, panels and the main window by moving the cursor over the desired item and pushing the **Help** button (or its mapped equivalent).

Examining the calendar

When first opened, the tool displays the appointments for a single day (today if the **-d** option has not been employed). The day page for today is patterned. Each appointment or reminder is shown at its start time in reverse video. If the appointment lasts longer than 30 minutes an arrow is drawn from the starting timeslot to the end of the appointment. If advance warning of future appointments has been requested, a popup display appears. The day display containing a future appointment may be displayed if the future appointment is selected with the *mouse-LB* (SELECT). The reminder popup may be removed permanently (during this *calentool* session) by selecting the **Dismiss** option; if the **Keep** option is selected, the reminder window will reappear each time the current day page is displayed.

If there are multiple appointments sharing a time slot, a **More** button appears to the right of the time slot. This may be toggled repeatedly to view each appointment in turn. Any arrows for hidden appointments are drawn as *dashed* lines to show all scheduled time at a glance. As the **More** button is toggled, the arrows change state such that the new active appointment has arrows drawn as solid lines and the previous appointment's arrows (if any) are now dashed. If appointment text is too wide for the day page, scroll buttons appear to the right of the text and may be used to view the text in its entirety. When first displayed, all text is left justified.

The control panel

The control subwindow contains various control buttons and today's date and time. View the current week, month, or year by employing the *mouse-LB* (SELECT) to select the **Week**, **Month**, or **Year** panel buttons. Pushing the *mouse-RB* (MENU) in the **Day**, **Week**, **Month**, or **Year** panel buttons activates pull-down menus with appropriate selections (certain of the selections may be inactivated due to the current display mode). The **Today** panel button redispays today's day page. In each of the four display modes, the **Previous** and **Next** panel buttons move backward or forward one day, week, month or year, as appropriate (maintaining the current display mode). There are also pull-down menus associated with these buttons, produced by selecting the *mouse-RB* (MENU) (again, certain options may be inactivated according to the current display mode). The **Current** button displays the current day, week, month or year, depending upon the current display mode. A pull-down menu associated with the **Current** button allows selection of the current day, week, month, or year displays, or direct entry of a specific date for which a day page is to be displayed. The **Done** button closes the frame to an icon. A pull-down menu associated with the **Done** button allows selection of either closing the frame or exiting the tool.

Week, month and year displays

In the week display, the initial part of each appointment message is visible. If there are overlapping appointments/notes, a **More** button appears at the bottom of the day column, which prints a message reminding the user to select the day display to be able to view all of the appointments/notes. The day strip for today, if present, is patterned. Move the cursor over any day of the week and select the *mouse-LB* (SELECT) to view the indicated day display.

In the month display, a triangular hatch-mark in the upper right-hand corner of a day indicates an appointment. The day box for today, if present, is patterned. Move the cursor over any day of the month and select the *mouse-LB* (SELECT) to view the indicated day display. Position the cursor over the arrow to the left of a week and select the *mouse-LB* (SELECT) to view the indicated week.

In the year display, a reverse-video date indicates an appointment. Today's date, if present, is patterned. Move the cursor over a particular month and select the *mouse-LB* (SELECT) to select the indicated month display.

The pulldown menu actuated within the top control bar of the window by selecting the *mouse-RB* (MENU) allows the tool to be closed, moved, terminated, etc.

Lunar and Solar data

Selection of the Sun or Moon icons in the day display reveals information about rising and setting times, lunar phases, local time, sidereal time, etc. An abbreviated solar data display is shown if the day currently being displayed is not today.

Iconic warning of an appointment

When *calentool* is in iconic form, the icon is inverted to a reverse video representation prior to a scheduled appointment and remains inverted for the duration of the appointment. The amount of advance warning given is set by the **appointment properties** menu, with a default of 10 minutes.

When there are no appointments or notes remaining for the current day, an alternate icon with an empty page is displayed instead of the standard or reverse video icons. For all icons, today's month and day of month are displayed at the bottom of the icon's calendar page.

Entering appointments

Appointments can only be entered in the day display. The day display presents a number of labeled time slots (generally 30 minute intervals) as well as a *notes* section at the end of the day page, to enter reminders not associated with a specific time. To enter an appointment, position the cursor over the required time slot and press the *mouse-LB* (SELECT). The slot is toggled to reverse video. Leaving the cursor positioned in the slot, type in the appropriate descriptive text. If the text exceeds the size of the window, scroll buttons will appear to the right. Typing new text into the time slot automatically right-justifies the text already present, so that the new text is appended. To indicate the duration of any appointment, click the *mouse-MB* (ADJUST) in the initial time slot (any existing duration arrow will be deleted); a vertical indicator arrow appears and follows the cursor. Drag the cursor to the location of the final time slot and release the button. The SunView/XView L6 and L8 keys (COPY/PASTE or PUT/GET) may also be used to paste the text from the shelf to an active appointment slot or from an appointment slot to the shelf. When inserting a string in *calentool* using PASTE, the slot must be active first (i.e. the *mouse-LB* (SELECT) must have been pressed first).

Changing an appointment

Selecting the *mouse-RB* (MENU) in the highlighted time slot produces a popup menu with the options **properties**, **cut**, **paste**, **copy**, **delete**, and **undelete**. To delete the current appointment, storing it in a temporary buffer, select the **cut** option. To copy the text of an appointment into the buffer without deleting it, select **copy**. To place the text of a buffer-stored appointment into a time slot, click the *mouse-RB* (MENU) in the new time slot, and then select the **paste** option.

To delete the current appointment, select the **delete** option. If the appointment in question is recurring, a special subwindow appears which allows the user to delete (or move) every occurrence or just today's occurrence. If the latter is selected, the **undelete** option is activated, which allows today's occurrence to be reinstated.

Appointment properties

An appointment may be further modified by selecting the **properties** option or pushing the Props key. This causes a properties subwindow to appear, in which the user may specify that the appointment is to be repeated every day, for selected weeks of the month (first through fifth, last or every Monday thru Friday), every month, and/or every year. Alternatively, the appointment may be repeated at a specified interval of days. The user can also specify a period of days prior to the appointment for which an advance warning will be printed; how many times this appointment will be repeated; and how many minutes ahead of the scheduled time the user should be reminded about an appointment (default is 10 minutes). For example, one could specify that a meeting is to occur on the first and third Tuesday of the month, in perpetuity, by selecting the repeat options **Selected Week**, **Every Month**, and **Every Year**, as well as the selected week indicators **1st** and **3rd**. After selecting the appointment options, the user can select either **Apply** or **Reset**

to close the options subwindow.

Entering notes

Entering notes is similar to entering appointments, except that no duration arrows can be appended, and the modify panel allows the user to indicate whether or not the note is to be used to mark the month and year displays, or to be printed (or mailed) when the **-P** (or **-M**) option is invoked.

Printing appointments

The **Print** button prints a copy of the day, week, month or year display. Pressing the *mouse-RB* (MENU) over this button produces a popup menu which allows either a raster image or a POSTSCRIPT® version of the current display to be printed. A third option allows modification of the default print command. The default print command is taken from the first provided by the following sources: the X Resource data base, the *PRINTER* environment variable, and the *PRINT_CMD* value provided by the system manager at the time of installation. The printer output can also be sent to a file instead of directly to the printer.

Saving outdated appointments

Appointments are recorded in a file named *.appointments*. If the **-o** option is in effect, at the end of a year all appointments for the past year are copied into a special file with a name *<appts_file>.yy* (where *yy* contains the final two digits of the past year). These appointments are then deleted from the current appointments file. If the **-x** and **-o** options are in effect, expired appointments are also copied to the outdated file, rather than being purged.

Examining other appointment files

The **File** button displays a window in which an alternate *.appointments* file can be specified. This is useful for maintaining multiple appointment books or for examining colleagues' calendars. The file can be made read-only or read-write according to the toggle option, and a file name can be typed into the window. The **Apply** button initiates reading of the currently displayed file, while the **Original** button restores the original file name that *calentool* was invoked with. The **Reset** button undoes any filename changes that have been made prior to selecting **Apply**. The **Save** button updates the current appointments file with any changes made that have not yet been logged.

FILE FORMAT

Using an included file (see below) is the one instance where manual editing of the *.appointments* file is still required (although one could use the window-based aids of *calentool* to build such a file, by means of the **-f** option, the include command must still be edited into the primary appointment file). The appointments file contains four types of lines:

```
# CalenTool V2.2 - DO NOT REMOVE THIS LINE
#include "file"
# <comment string>
YY MO DD HH MI AA [II] <WW> +RR %AA # message
```

Header line

The first line in an *appointments* file identifies the version of *calentool* in use. This line should never be removed.

Included appointment files

A **non-editable** appointments file (for example, one containing site specific holidays) can be included. Three formats are possible for specifying such a file:

```
#include "/pathname/file"
or
#include "file"
or
#include <file>
```

In the second case, the file will be prepended with the pathname used for the appointments file. In the last case, the included file is assumed to reside in a system-wide library directory specified at the time of installation (see your system administrator). The **#** must start in column 1 of the appointments file. The first line of an included file must also have a header line. Included files may not include other files.

Comment line

A # in column one (not followed by the string "include") indicates a comment; the rest of the line is ignored.

Appointment/Note entries

All fields are separated by at least one space character.

Mandatory entries

The *YY* field is the year (00-99), the *MO* field is the month (1-12) and *DD* is the day (1-31). The *DD* field can also contain a two-character alphabetic string describing a day of the week: Su, Mo, Tu, We, Th, Fr, Sa or MF (Monday thru Friday). This feature is used in conjunction with wildcards (see below), and the *[II]* field, which must appear within square brackets, and which can contain the digits 1-5 and the letter L, separated by commas, to indicate the first through fifth (or last) monthly occurrence of the specified day of the week. *HH* and *MI* are the starting hour (00-23) and minutes (00 or 30). The *AA* field is the number of arrow bars (additional 30 minute time slots) required.

Notes

A *HH* value of 99 indicates a note, rather than an appointment, with *MI* designating whether presence of the note is to be shown (marked) in the month and year panels (00 indicates that it is to be marked, 99 indicates that it should not be marked).

Wildcards for recurring appointments/notes

A double asterisk (**) can be used in place of the year, month and/or day fields to indicate every year, month or day.

Optional entries

The *[II]* field appears within square brackets, and (if the *DD* field contains a numerical value) is taken to be an interval in days between recurring appointments. The *<WW>* field appears within broken brackets, and indicates the number of days of advance warning required. The *+RR* field is preceded by a plus sign, and indicates the repetition count for a given appointment. The *%AA* field is preceded by a percent sign, and indicates the number of minutes in advance of an appointment the user should be reminded. If this field does not exist, the default value of 10 minutes is used.

Appointment text

If a # character appears in front of the text, it indicates that a recurring appointment has been suppressed for that day. A leading ` character is prepended to a text entry that starts with special characters to prevent the text from being misinterpreted as appointment options.

Example entries

A meeting that occurs weekly at 0900 and lasts for 1 hour, starting on April 1st, would be represented as:

```
88 04 01 09 00 01 [7]           Weekly status meeting
```

Several other examples:

```
** 04 01 99 99 00           April Fool's Day
** ** Tu 10 30 00 [1,3]     Meeting on 1st and 3rd Tues. of Month
** ** 01 99 00 00 <1>      First day of every month, one day warning
88 05 ** 99 99 00           On vacation for entire month of May 1988
89 11 06 99 00 00 +4       SigFishing Conference
** ** MF 17 00 00           Daily backups
```

SUPPLIED SPECIAL DATES FILES

Calentool is supplied with a number of system-wide special dates files which may be included in a user's *.appointments* file:

ancient	Events celebrated in ancient times
can_holiday	Major Canadian holidays (holidays from work)
celtic	Holidays/events of interest to Celts
computing	Events in the history of computing

events	Historical events (major and minor)
gdead	Dates concerning the rock group Grateful Dead
hawaii	Historical events pertaining to Hawaii
literature	Historical events pertaining to literature, newspapers and comics
lives	Biographical dates of note (births, deaths, weddings)
lotr	Special dates for fans of Tolkien's <i>Lord of the Rings</i>
movies	Historical events pertaining to motion pictures
music	Historical events pertaining to the music world (both popular and traditional)
radio	Historical events pertaining to radio
sfo	Historical events pertaining to San Francisco, CA and the surrounding area
space	Dates of note in the history of the exploration of outer space
sports	Dates concerning sports.
television	Dates concerning television programs and history of tv.
usa_holiday	Major US holidays (holidays from work)
usa_other	Minor US/Canadian holidays
usa_states	US holidays specific to selected states
witchcraft	Dates of interest to witches and warlocks
world	Holidays from countries other than the US/Canada

ENVIRONMENT VARIABLES, INITIALIZATION FILES, AND COMPILATION OPTIONS

By default, the *.appointments* file employed by *calentool* resides in the users' home directory. Alternatively, the environment variable *CALENTOOL_DIR* can be set to the full pathname of a directory where the *.appointments* file resides. *Calentool* must have write permission in the directory to be used.

Compile time options allow modification of the start and ending year for the year pull-down menu, and various parameters defining the display.

FILES

<i>\$HOME/.appointments</i>	default appointments file
<i>\$HOME/.Xdefaults</i>	defaults initialization file
<i>/tmp/appts*</i>	default temporary appointments file, while active
<i>\$HOME/.msgfile</i>	message file (containing current appointment) for <i>xnlock(1L)</i> program
<i>/usr/openwin/lib/calentool</i>	default directory containing special date inclusion files
<i>/usr/tmp/calentool.ps</i>	default file used when POSTSCRIPT® printer File Only output is selected
<i>/usr/tmp/calentool.ras</i>	file used when raster printer File Only output is selected
<i>Ct.Xdefaults</i>	example resource entries

SEE ALSO

cal(1), *cal2ct(1L)*, *calencheck(1L)*, *calendar(1)*, *clocktool(1)*, *cron(8)*, *mail(1)*, *month(1L)*, *monthtool(1L)*, *month2ct(1L)*, *mt2ct(1L)*, *xnlock(1L)*, *xview(1)*

REFERENCES

An excellent compendium which describes basic terminology of time measurement, methods of astronomical computation, and the convoluted history of calendars:

The Nautical Almanac Offices of the United Kingdom and the United States of America, *Explanatory Supplement to the Astronomical Ephemeris and the American Ephemeris and Nautical*

Almanac, Her Majesty's Stationery Office, London, 1961 (reprinted with amendments, 1977).

The best single source for practical computations of solar and lunar data:

Jean Meeus, *Astronomical Formulae for Calculators*, *Monografieën over Astronomie en Astrofysica*, Volkssterrenwacht Urania V.Z.W., Mattheessensstraat 62, B 2540 Hove, Belgium, Vereniging voor Sterrenkunde V.Z.W., Ringlaan 3, B 1180 Brussel, Belgium, Vol. 4, Derde Druk, October 1980.

Other helpful references for astronomical computations:

Eric Burgess, *Celestial BASIC*, Revised Edition, Sybex, 1985 (cookbook oriented, many algorithms hard to dig out of turgid BASIC).

Pierre Bretagnon and Jean-Louis Simon, *Planetary Programs and Tables from -4000 to +2800*, Willmann-Bell, 1986 (for utmost accuracy in planetary computations).

A non-scholarly work with easily implemented algorithms for computation of Christian and Jewish holidays and (an approximation to) the Islamic New Year:

Wolfgang Alexander Schocken, *The calculated confusion of calendars; puzzles in Christian, Jewish and Moslem calendars*, 1st Ed., Vantage Press, New York, 1976.

Useful tables and additional information about the Islamic calendar:

G. S. P. Freeman-Grenville, *The Muslim and Christian Calendars*, Oxford University Press, London, 1963.

F. R. Unat, *Hicri Tarihleri*, Turktarih Kurumu Basimevi, Ankara, 1959 (Turkish).

U. V. Tsybulsky, *Calendar of Middle Eastern Countries*, Nauka Publishing House, Moscow, 1979 (English).

Information (regrettably, not at all current) about Japanese holidays:

W. H. Erskine, *Japanese Festival and Calendar Lore*, Kyo Bun Kwan, Tokyo, 1933.

CALLING ALL HACKERS

Please help extend the special dates files and date computation library (only carefully verified dates and algorithms, please!). In particular, it would be splendid if someone would expand the range of astronomical computations, which currently include only the equinoxes and solstices; one could add dates/times of the major meteor showers, planetary risings and settings, etc. Perhaps a sailing buff could build in high/low tide estimations. The lunar calendar date computation library remains to be completed. There are many other historical and contemporary calendrical systems we have overlooked (Egyptian, Armenian, Babylonian, Greek, Julian, Indian, and Russian, as well as ecclesiastical calendars such as the Alexandrian). The present dates library provides useful calendrical computations not currently exploited by *calentool*, such as determining the number of days, or weekdays, or Mondays between two dates. Perhaps a third icon could be placed next to those for the solar and lunar almanacs, which would open a calendrical computation window. It would be very useful if someone would write a *curses*(3X) based front-end for *calentool* format date files for those not using *sunttools*(1). An efficient way of doing this might be to merge *calentool* with the excellent *Dates*(1L) program of Dain Samples (samples@dougfir.berkeley.edu).

An SunView version of *calentool* is also available.

Mail suggestions, corrections, and additions for the Hacker's Almanac to Bill Randle (billr@saab.CNA.TEK.COM).

BUGS

Without a doubt, but hopefully pretty minor.

CAUTIONS

Note that the dates computed here are for the Gregorian calendar, which was a modification of the Julian calendar first introduced in 1582. Countries have adapted this system as recently as 1927 (Turkey), and in some countries it is used as a civil calendar in co-existence with a separate indigenous calendar system. Apply caution in using computed dates for non-recent years and non-European countries.

AUTHORS

The original suntools version of *calentool* was contributed to the Sun User Group tape (17 April 1987) by Philip Heller (Sun Microsystems, heller%terrapi@sun.COM). Sun Microsystems owns this program, but has no interest in maintaining it.

Extensive corrections and additions have been executed by Bill Randle (Tektronix, Inc., billr@saab.CNA.TEK.COM); it is likely that Phil Heller would recognize little of the current program! R. P. C. Rodgers (rodders@maxwell.mmwb.ucsf.edu, School of Pharmacy, University of California, San Francisco) performed extensive beta testing, made numerous design suggestions, and contributed the holiday computation library, icons, manual pages, and special dates files for later SunView versions. The initial set of special dates files were modified from earlier net postings contributed by Rich Kulawiec (rsk@boulder.Colorado.EDU) and Dick Wexelblat (...decvax!ittvax!wxlvax!rlw), assisted by the following contributors known only by their network addresses: (ittvax!decvax!harpo!eagle!mhuxl!ihnp4!ihuxw!pector), (ittvax!bunker!dick), (decvax!sii!mem), (ittvax!decvax!bellcore!yquem!psl), (seismo!rochester!rocksvax!sunybc!colonel), and (decvax!seismo!rochester!ritcv!ccieng5!ccieng6!wla), in addition to others whose identifications have been lost (speak up!). More dates were obtained from "Today in History" by Robert Heckendorn at Hewlett-Packard in Fort Collins, Colorado (robert@fc.hp.com) for which the conversion to calentool format was done by Larry W. Virden (lww27%cas.BITNET@CUNYVM.CUNY.Edu).

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Additional special thanks for the XView port go to Randy Thomas (rjt@sedist.cray.COM) who did the first XView port of calentool 2.1 and has greatly assisted in debugging the current version, Swen Thuemmler (swen@uni-paderborn.de) who did an independent port of 2.1 from Randy's, Doug Eldred (eldred@hare.udev.cdc.COM) who helped me out with some X and XView questions along with valuable early testing, and many, many others who have assisted with valuable alpha and beta testing of the XView port.