

# Package: ArchaeoCal (via r-universe)

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**Title** An R Interface to 'OxCal'

**Version** 0.0.0.9000

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**Description** What the package does (one paragraph).

**License** GPL (>= 3)

**URL** <https://archaeostat.github.io/archaeocal/>

**BugReports** <https://github.com/ArchaeoStat/ArchaeoCal/issues>

**Imports** utils, V8

**Suggests** tinytest

**Encoding** UTF-8

**Roxygen** list(markdown = TRUE)

**RoxygenNote** 7.3.2

**Config/pak/sysreqs** libssl-dev libnode-dev

**Repository** <https://archaeostat.r-universe.dev>

**RemoteUrl** <https://github.com/ArchaeoStat/ArchaeoCal>

**RemoteRef** HEAD

**RemoteSha** b549b7873bbd0cef14c1cd701bc01af45750f43a

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as.data.frame.OxCalResults

*Coerce to a Data Frame*

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## Description

Coerce to a Data Frame

## Usage

```
## S3 method for class 'OxCalResults'  
as.data.frame(x, row.names = NULL, optional = FALSE, ...)
```

## Arguments

x	A <a href="#">list</a> returned by <code>oxcal_parse()</code> .
row.names	A <a href="#">character</a> vector giving the row names for the data frame description, or NULL.
optional	A <a href="#">logical</a> scalar. If FALSE then the names of the variables in the data frame are checked to ensure that they are syntactically valid variable names and are not duplicated.
...	Currently not used.

## Value

A [data.frame](#) with the following columns:

name

operation

type

date

error

agreement

convergence

like\_range A list giving the confidence intervals of the likelihood.

like\_density A list giving the likelihood.

post\_range A list giving the confidence intervals of the posterior probability.

post\_density A list giving the posterior probability.

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oxcal_calibrate	<i>14C Calibration with OxCal</i>
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## Description

14C Calibration with OxCal

## Usage

```
oxcal_calibrate(names, dates, errors, curve = "IntCal20")
```

## Arguments

names	A <a href="#">character</a> vector specifying the names of the dates (e.g. laboratory codes).
dates	A <a href="#">numeric</a> vector giving the BP dates to be calibrated.
errors	A <a href="#">numeric</a> vector giving the standard deviation of the dates to be calibrated.
curve	A <a href="#">character</a> string specifying the calibration curve to be used.

## Value

A [list](#) with class `OxCalResults` (see [oxcal\\_parse\(\)](#)).

## Author(s)

N. Frerebeau

## See Also

Other OxCal tools: [oxcal\\_configure\(\)](#), [oxcal\\_execute\(\)](#), [oxcal\\_install\(\)](#), [oxcal\\_parse\(\)](#)

## Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Calibrate 14C dates
cal <- oxcal_calibrate(
  names = c("X", "Y"),
  dates = c(5000, 4500),
  errors = c(45, 35)
)

as.data.frame(cal)

## End(Not run)
```

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`oxcal_configure`*Setup OxCal*

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## Description

Setup OxCal

## Usage

```
oxcal_configure(  
  command = NULL,  
  os = NULL,  
  install = TRUE,  
  install_location = NULL,  
  install_url = NULL,  
  ask = TRUE,  
  verbose = getOption("ArchaeoCal.verbose")  
)
```

## Arguments

<code>command</code>	A <a href="#">character</a> string specifying the path to the OxCal directory.
<code>os</code>	A <a href="#">character</a> string specifying the operating system of the workstation. It must be one of "Linux", "Windows" or "Darwin". If NULL (the default), the operating system will be determined automatically (see <a href="#">Sys.info()</a> ).
<code>install</code>	A <a href="#">logical</a> scalar: if OxCal binary is not found, should it be downloaded and installed?
<code>install_location</code>	A <a href="#">character</a> string specifying the directory to extract OxCal files to. It will be created if necessary (see <a href="#">utils::unzip()</a> ).
<code>install_url</code>	A <a href="#">character</a> string specifying the url from which OxCal could be installed.
<code>ask</code>	A <a href="#">logical</a> scalar: if OxCal is not installed, should the user be asked before downloading it?
<code>verbose</code>	A <a href="#">logical</a> scalar: should status updates be displayed?

## Details

Downloads the latest version of Oxcal (if needed) and sets the executable path correctly.

## Value

Invisibly returns the path to the OxCal executable.

## Author(s)

N. Frerebeau

**See Also**

Other OxCal tools: [oxcal\\_calibrate\(\)](#), [oxcal\\_execute\(\)](#), [oxcal\\_install\(\)](#), [oxcal\\_parse\(\)](#)

**Examples**

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
    {
      R_Date("Lab-1", 5000, 25);
      R_Date("Lab-2", 4900, 37);
    };
    Boundary("Between");
    Phase("Phase2")
    {
      R_Date("Lab-3", 4800, 43);
    };
    Boundary("End");
  };
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

as.data.frame(res)

## End(Not run)
```

---

oxcal\_execute

*Execute an Oxcal Script*

---

**Description**

Execute an Oxcal Script

**Usage**

```
oxcal_execute(
  script,
  file = NULL,
  mcmc = "MCMC_Sample",
  verbose = getOption("ArchaeoCal.verbose"),
```

```
    ...
  )
```

### Arguments

script	A <b>character</b> string of instructions for OxCal.
file	A <b>character</b> string naming a file (without extension) to write script to. Output files will be named after file and written to the same directory.
mcmc	A <b>character</b> string giving the name of the output file for the MCMC samples (without extension). It must match the Name argument of OxCal's <b>MCMC_Sample()</b> function. Only used if script contains the MCMC_Sample() command.
verbose	A <b>logical</b> scalar: should status updates be displayed?
...	Further parameters to be passed to <b>system2()</b> .

### Value

A **list** with class OxCalOutput containing the following elements:

oxcal	A <b>character</b> string giving the path to the .oxcal file.
js	A <b>character</b> string giving the path to the .js file.
log	A <b>character</b> string giving the path to the .log file.
txt	A <b>character</b> string giving the path to the .txt file.
csv	A <b>character</b> string giving the path to the .csv file.

### Author(s)

N. Frerebeau

### References

[https://c14.arch.ox.ac.uk/oxcalhelp/hlp\\_analysis\\_file.html](https://c14.arch.ox.ac.uk/oxcalhelp/hlp_analysis_file.html)

### See Also

Other OxCal tools: [oxcal\\_calibrate\(\)](#), [oxcal\\_configure\(\)](#), [oxcal\\_install\(\)](#), [oxcal\\_parse\(\)](#)

### Examples

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
  }
}
```

```
{
  R_Date("Lab-1",5000,25);
  R_Date("Lab-2",4900,37);
};
Boundary("Between");
Phase("Phase2")
{
  R_Date("Lab-3",4800,43);
};
Boundary("End");
};
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

as.data.frame(res)

## End(Not run)
```

---

oxcal\_install

*Download OxCal*

---

## Description

Download OxCal

## Usage

```
oxcal_install(
  install_url = NULL,
  install_location = NULL,
  verbose = getOption("ArchaeoCal.verbose")
)
```

## Arguments

`install_url` A [character](#) string specifying the url from which OxCal could be installed.

`install_location` A [character](#) string specifying the directory to extract OxCal files to. It will be created if necessary (see [utils::unzip\(\)](#)).

`verbose` A [logical](#) scalar: should status updates be displayed?

## Value

Invisibly returns the path to the OxCal directory.

## Author(s)

N. Frerebeau

**See Also**

Other OxCal tools: [oxcal\\_calibrate\(\)](#), [oxcal\\_configure\(\)](#), [oxcal\\_execute\(\)](#), [oxcal\\_parse\(\)](#)

**Examples**

```
## Not run:
## Download OxCal
oxcal_configure()

## Custom script
scr <- 'Plot()
{
  Sequence("Sequence1")
  {
    Boundary("Begin");
    Phase("Phase1")
    {
      R_Date("Lab-1", 5000, 25);
      R_Date("Lab-2", 4900, 37);
    };
    Boundary("Between");
    Phase("Phase2")
    {
      R_Date("Lab-3", 4800, 43);
    };
    Boundary("End");
  };
};'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

as.data.frame(res)

## End(Not run)
```

---

oxcal\_parse

*Read and Parse OxCal Output*

---

**Description**

Read and Parse OxCal Output

**Usage**

```
oxcal_parse(path)
```

```
## S3 method for class 'OxCalOutput'
oxcal_parse(path)
```



```
## S3 method for class 'character'  
oxcal_parse(path)
```

### Arguments

path A [character](#) string naming a JavaScript file which the data are to be read from (or a list returned by [oxcal\\_execute\(\)](#)).

### Value

A [list](#) with class `OxCalResults` containing the following elements:

oed A [list](#) of OxCal data which holds the ranges, probability distributions, etc. for each parameter.

model A [list](#) of information about the model.

calib A [list](#) of information about the calibration curve.

### Author(s)

N. Frerebeau

### References

[https://c14.arch.ox.ac.uk/oxcalhelp/hlp\\_analysis\\_file.html](https://c14.arch.ox.ac.uk/oxcalhelp/hlp_analysis_file.html)

### See Also

Other OxCal tools: [oxcal\\_calibrate\(\)](#), [oxcal\\_configure\(\)](#), [oxcal\\_execute\(\)](#), [oxcal\\_install\(\)](#)

### Examples

```
## Not run:  
## Download OxCal  
oxcal_configure()  
  
## Custom script  
scr <- 'Plot()  
{  
  Sequence("Sequence1")  
  {  
    Boundary("Begin");  
    Phase("Phase1")  
    {  
      R_Date("Lab-1", 5000, 25);  
      R_Date("Lab-2", 4900, 37);  
    };  
    Boundary("Between");  
    Phase("Phase2")  
    {  
      R_Date("Lab-3", 4800, 43);  
    };  
  };  
};
```

```
      Boundary("End");
    };
  };'
out <- oxcal_execute(scr)
res <- oxcal_parse(out)

as.data.frame(res)

## End(Not run)
```