

# Package: rtide (via r-universe)

November 25, 2024

**Title** Tide Heights

**Version** 0.0.11

**Description** Calculates tide heights based on tide station harmonics.

It includes the harmonics data for 637 US stations. The harmonics data was converted from

<https://github.com/poissonconsulting/rtide/blob/main/data-raw/harmonics-dwf-20151227-free.tar.bz2>,

NOAA web site data processed by David Flater for 'XTide'. The code to calculate tide heights from the harmonics is based on 'XTide'.

**License** GPL-3

**URL** <https://github.com/millerlp/rtide>

**BugReports** <https://github.com/millerlp/rtide/issues>

**Depends** R (>= 4.0)

**Imports** abind, chk, dtttr2, tibble, utils

**Suggests** covr, ggplot2, scales, spelling, testthat (>= 3.0.0)

**Config/testthat/edition** 3

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 7.3.2

**Language** en-US

**NeedsCompilation** no

**Author** Joe Thorley [aut] (<<https://orcid.org/0000-0002-7683-4592>>),  
Luke Miller [aut, cre], Abram Fleishman [aut], Poisson  
Consulting [cph]

**Maintainer** Luke Miller <contact@lukemiller.org>

**Repository** CRAN

**Date/Publication** 2024-11-20 07:40:02 UTC

## Contents

brandywine . . . . .	2
harmonics . . . . .	2
is.tide_harmonics . . . . .	3
monterey . . . . .	3
tide_datetimes . . . . .	4
tide_height . . . . .	4
tide_height_data . . . . .	5
tide_slack_data . . . . .	6
tide_stations . . . . .	6
<b>Index</b>	<b>7</b>

---

brandywine	<i>Brandywine Tide Height Data</i>
------------	------------------------------------

---

### Description

High/Low Tide Predictions from [https://tidesandcurrents.noaa.gov/tide\\_predictions.html](https://tidesandcurrents.noaa.gov/tide_predictions.html).

### Usage

brandywine

### Format

A tbl data frame:

**Station** The station name (chr).

**DateTime** The date time (time).

**MLLW** The tide height in m (dbl).

---

harmonics	<i>Harmonics</i>
-----------	------------------

---

### Description

A object of class `tide_harmonics` providing tidal harmonic data for US stations.

### Usage

harmonics

**Format**

An object of class tide\_harmonics of length 4.

**Details**

Converted from harmonics-dwf-20151227-free, NOAA web site data processed by David Flater for XTide.

---

is.tide\_harmonics      *Is tide\_harmonics*

---

**Description**

Tests if object inherits from class tide\_harmonics.

**Usage**

```
is.tide_harmonics(x)
```

**Arguments**

x                      The object to test.

---

monterey                      *Monterey Tide Height Data*

---

**Description**

High/Low Tide Predictions from [https://tidesandcurrents.noaa.gov/tide\\_predictions.html](https://tidesandcurrents.noaa.gov/tide_predictions.html).

**Usage**

```
monterey
```

**Format**

A tbl data frame:

**Station** The station name (chr).

**DateTime** The date time (time).

**MLLW** The tide height in m (dbl).

---

tide_datetimes	<i>Tide Date Times</i>
----------------	------------------------

---

**Description**

Generates sequence of date times.

**Usage**

```
tide_datetimes(
  minutes = 60L,
  from = as.Date("2015-01-01"),
  to = as.Date("2015-12-31"),
  tz = "America/Los_Angeles"
)
```

**Arguments**

minutes	An integer of the number of minutes between tide heights
from	A Date of the start of the period of interest
to	A Date of the end of the period of interest
tz	A string of the time zone.

**Value**

A POSIXct vector.

**Examples**

```
tide_datetimes()
```

---

tide_height	<i>Tide Height</i>
-------------	--------------------

---

**Description**

Calculates tide height at specified stations based on the supplied harmonics object.

**Usage**

```
tide_height(
  stations = "Monterey Harbor",
  minutes = 60L,
  from = as.Date("2015-01-01"),
  to = as.Date("2015-01-01"),
  tz = "UTC",
  harmonics = rtide::harmonics
)
```

**Arguments**

stations	A character vector of stations to match - treated as regular expressions.
minutes	An integer of the number of minutes between tide heights
from	A Date of the start of the period of interest
to	A Date of the end of the period of interest
tz	A string of the time zone.
harmonics	The harmonics object.

**Value**

A data frame of the tide heights in m by the number of minutes for each station from from to to.

---

tide_height_data	<i>Tide Height Data</i>
------------------	-------------------------

---

**Description**

Calculates tide height at specified stations at particular date times based on the supplied harmonics object.

**Usage**

```
tide_height_data(data, harmonics = rtide::harmonics)
```

**Arguments**

data	A data frame with the columns Station and DateTime.
harmonics	The harmonics object.

**Value**

A data frame of the tide heights in m.

---

tide_slack_data	<i>Tide Slack Data</i>
-----------------	------------------------

---

**Description**

Determines the closest slack tide for specified stations at particular date times based on the supplied harmonics object.

**Usage**

```
tide_slack_data(data, harmonics = rtide::harmonics)
```

**Arguments**

data	A data frame with the columns Station and DateTime.
harmonics	The harmonics object.

**Value**

A data frame of the slack tide date times and heights in m.

---

tide_stations	<i>Tide Stations</i>
---------------	----------------------

---

**Description**

Gets vector of matching stations.

**Usage**

```
tide_stations(stations = ".*", harmonics = rtide::harmonics)
```

**Arguments**

stations	A character vector of stations to match - treated as regular expressions.
harmonics	The harmonics object.

# Index

## \* datasets

brandywine, 2

harmonics, 2

monterey, 3

brandywine, 2

harmonics, 2

is.tide\_harmonics, 3

monterey, 3

tide\_datetimes, 4

tide\_height, 4

tide\_height\_data, 5

tide\_slack\_data, 6

tide\_stations, 6