

Tides

GARMIN APPLICATION



User manual

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Always want to stay informed ?

Tides application webpage:

<https://www.jeanmichelgruber.com/tides-eng.html>

Updates news: <https://www.jeanmichelgruber.com/blog-eng.html>

YouTube channel:  **YouTube** [Surfy66 channel](#)

Twitter / X account:  [@Surfy66](#)

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Design - Programming - Aesthetics

Jean-Michel Gruber © 2018 - 2025

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Important information regarding the process of purchasing and installing the application

As the procedure is not automated, the response to your purchase always takes place, in principle, within 12 hours maximum, by sending a confirmation email.

If despite everything you have not received a response from me within this period, check that your PayPal address is correct, or that my response has not fallen in your spam box.

Thanks in advance.

Given its complexity, and the number of features offered in this app and, as well as the time required for its development and maintenance, the price of this application is set to

13 USD

Please note that this is a one-time purchase (no subscription, no renewal of purchase , etc).

In other words, your purchase and activation code are valid ... lifetime!

In order to be able to calculate your personal activation code, please send me an additional email which will contain the following information:

your ID number, displayed on the main screen as ID: 2988-12345, for example (as a valid activation was not entered in the application).

You can also find this identifier by going to the following menu:

« **Tools → Activation Code → ID Number** »

Upon receipt of your email containing this identifier number, I will reply to you by sending another email, which will therefore contain your activation code as well as some other additional information that could be useful.

Free version vs paid version

It is quite possible to use the free version of this watch face. However, access to tide data will be restricted, so you can use this watch face as a simple time viewer with two additional data items displayed at the top of the watch face.

Conversely, purchasing the watch face will allow you to unlock all tide features and view all the corresponding data on the screen.

— Note

Purchasing the watch face here, on my website, is completely independent of the optional purchase of an API key that you might wish to make on one of the tide data provider websites offered by this watch face (see detailed explanations below). In other words, purchasing and obtaining an API key from one of the weather providers is not equivalent to purchasing the watch face!

Entering the activation code

There are two ways to enter the activation code:

- connect and sync your watch with the Garmin **Connect IQ** app, then select the Tides watch face from the list of watch faces installed on your watch. Then, press the blue button to access the watch face settings. The first field, titled "Activation Code," allows you to enter your activation code.
- when the Tides watch face is visible and displayed on the watch, long-press the **UP/MENU** button on the watch, then select the "Watch Face" menu. The Tides watch face should appear in edit mode. Press the **START** key and choose the "Customize" menu. This will take you to the watch face's built-in menu. Finally, go to the "**Tools → Activation Code → Unlock Code**" menu. Confirm your entry, and you can then exit the menu to return to the watch face, which should now be unlocked. Your identifier number is unique and corresponds only to the application which it has been calculated for, so you will not be able to transfer it to another application, or otherwise.

Despite all the care taken in this application, it could remain some hidden bugs, or possible malfunctions (who knows?). Therefore, thank you to contact me directly by email to inform me rather than posting bad comments on the site, I will then do what is necessary to fix the issue as soon as possible. Thank you in advance.

Please, feel free to enjoy !

Watch models compatible with the application

Rather than listing all the watch models for which the application is compatible (it would be far too long!), I'm going to indicate the non-compatible models here instead, so if your model doesn't appear in the list below, it means that your watch is indeed compatible with this application:

The download of the application is available on the Garmin Connect site, here: <https://apps.garmin.com/apps/ea30e5ce-5999-4d7b-8885-b846e88d5bb8>

Once the application is installed on the watch, you can see the release informations by going to the **"Tools → App Version"** menu.

Non compatible models

Approach S60

Tous les compteurs vélo (série Edge)

Forerunner 55

Forerunner 230 / 235 / 735xt / 920XT

D2 Bravo / Titanium

Fenix 3 / 3 HR

Tous les GPSMAP

Montana / Oregon / Rino 7 Series

Vivoactive

Vivoactive HR

Purpose of the application

A watch face that allows you to view the tides informations for a given location.

The watch face offers two data providers:

- **StormGlass** (free) -> data in MLLW or MSL format
- **WorldTides Infos** (paid, 3.99 USD / year) -> data in absolute values

You have the choice of using either of these two services with this watch face.

The purpose of this watch is to display tidal information on the screen for a location chosen by the user.

The data recovery period extends from 1 day minimum to 5 days maximum, frequency to be chosen in the options of the dial. This 5-day limitation is due to the fact that beyond 5 days, the amount of information returned in the background process would be too large for the admissible memory capacity, then generating a memory error / exception.

When the query has been executed, and it has successfully retrieved data, the information displayed on the screen is:

- left field -> time of previous tide with its status (high = HIGH or low = LOW), and its height
- right field -> the time of the next tide, its status (high = HIGH or low = LOW), and the countdown to that time, or the height of the next tide (in meters or feet, the unit selected according to the watch's general settings), alternately
- a gauge surrounding the screen, which fills (blue = rising tide) or empties (red = falling tide) according to the status of the next tide
- a number, at the very bottom of the dial, indicating the number of tide data remaining in the data table, surrounded by the green battery gauge

How to proceed?

In order for the data recovery request to be executed, the following parameters must be met:

- you must have created an account on one of the two sites offered, in order to receive an API key that will allow you to access the data (please see explanations below)
- the API key(s) must be entered and saved in the settings of the dial
- the Bluetooth function of the watch must be activated
- the watch must be connected and synchronized with your phone and Garmin Connect for mobile
- a valid GPS position (in degrees format, for example LAT = 47.705578, LON = -3.345944) must have been acquired or entered in the settings of the watch face, and be stored on the watch

Once the watch is connected to Garmin Connect, data retrieval may take some time to reach the watch (from 1 to 10 minutes) because this process is carried out in the background with 5 minute intervals.

So, wait and stay connected to the smartphone until the data has been recovered.

However, this process is only done once. Indeed, upon receipt of the data, they are saved and stored permanently on the watch so you can disconnect the watch from the smartphone (if you wish), the data will still exist on the watch until the table is exhausted. of data (which depends on the number of days of collection).

In other words, as long as the stored table still contains data, the dial will never seek to launch a new acquisition request.

So, if you collect data for 5 days, you can rest easy for almost ... a week!

Attention please: at some point, it may turn out that the watch face can no longer retrieve and display the tide data on the screen, due to the excessive number of data to import depending on the number of days selected (this may especially happen if the amount of memory for the background process decreases, for some reason). You will therefore have the warning message "There is a problem etc" on the screen. In this case, the solution is to reduce the number of forecast days, from 5 to 4 days then, if that still does not work, from 4 to 3 days, and so on until the data is obtained.

The number circled around the battery gauge indicates the amount of tide data remaining in the data table.

A number close to zero means that you'll need to update the data by retrieving it again (connecting to the smartphone), or risk having an empty table with no tide information left on the screen.

And as long as the table remains empty, the dial will try, every 5 minutes, to launch a new request, until the table is again filled with new data.

How to register and access the sites of the 2 data providers?

— **StormGlass:** go to this address <https://stormglass.io>

1- click on the "**Pricing**" tab at the top of the page

2- on the new page, select the "Free" plan by clicking the "**Sign Up**" button at the bottom of the box

3- enter the registration data of your choice

4- you are then assigned an API key, either by sending an email, or directly accessible and searchable in your account data

— **WorldTides Info:** go to this address <https://www.worldtides.info>

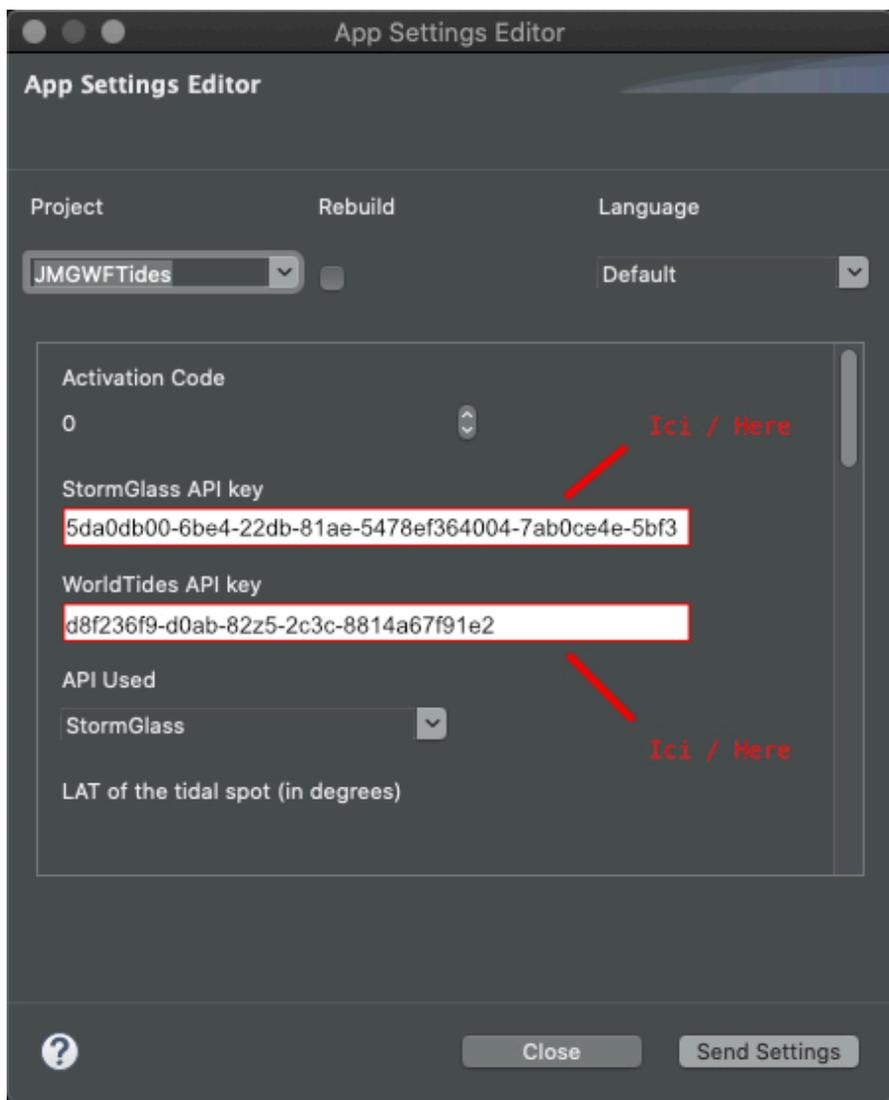
1- click on the "**Register / Log In**" tab at the top right of the page

2- enter the registration data of your choice

3- choose the plan that suits you according to your needs; at a minimum, I recommend the annual plan at 3.99\$, which gives you a credit of 1000 requests per year, more than enough if you only intend to use this stock with the Tides screen. Indeed, at the rate of a daily request (which represents the maximum), this will therefore generate a total of 365 requests over the year, i.e. a little more than a third of your total stock, you will have some left over, still almost 2/3 available!

4- you are then assigned an API key, which you can immediately consult in your account data

What to do with these API keys?



Connect the watch to your phone and Garmin Connect, and open the watch face settings.

Copy / insert the API key corresponding to the site concerned in the dedicated field then save the modifications.

Disconnect your watch from Garmin Connect, the API keys are now permanently saved on the watch.

Difference between the data reported by these 2 sites

— StormGlass:

- collects the data in MLLW format, which corresponds to the average level of the tide in relation to all the tidal values calculated in the past
- the execution request takes into account the current time, the reported data therefore starts from this time
- example, query over 3 days -> 11/28/2021 at 3 p.m., table = start 11/28/2021 at 3 p.m. -> end 12/01/2021 at 3 p.m.

— WorldTides:

- returns the data in CD format (absolute heights), the height displayed on the screen therefore corresponds precisely to the true height of the tide as it would be measured in situ
- the execution request retrieves the data from midnight, the uploaded data therefore starts from this time; if you run the query at the end of the day, then you lose almost 1 day of data
- example, query over 3 days -> 11/28/2021 at 3 p.m., table = start 11/28/2021 at midnight -> end 11/30/2021 at 11:59 p.m.

Accessing the watch face settings

- watch models compatible with the dial menus (**HIGH** version) → access to the watch face management parameters is carried out directly on the watch (no need to use Garmin Connect, except for a few permanent options). So you can change the options / appearance of the watch face without having to connect to the smartphone and Garmin Connect
- models not compatible (**LOW** version) → access to the management parameters of the watch face is carried out exclusively via Garmin Connect

For all models, the 5 options accessible via Garmin Connect are:

- the application activation code- API keys of the 2 web services
- the LAT and LON coordinates of the spot (to be entered in degrees)

Models supporting the HIGH version of the dial can automatically:

- retrieve the LAT-LON position of the user's location, simply by pressing the **START** button in the integrated menu "**Tides → Get Location!**"
- view the tide schedule table for the period retrieved (menu "**Tides → View Tides**")
- reset / empty the current tide data table in order to retrieve new updated data, or in the event of a change of weather provider (menu "**Tides → Force Collecting Tides Forecast**")

Tip: if you modify the data source (change of provider in "**Tides → Options → API Used**"), remember to reset the data table immediately after because, if you do not do it, the tide table probably containing data, the new query will not be executed until the table contains at least 2 hours, or more.

To access the integrated menu (only on compatible models), proceed as follows:

- 1- position yourself on the Tides screen
- 2- long press on the UP key (or long press on the touch screen) → a menu is displayed
- 3- select the "Watch face" menu
- 4- select the "Tides" dial using the dial selection carousel
- 5- press the START key, a sub-menu is displayed
- 6- select the first "Customize" submenu; this screen is then displayed, which allows you to access all the configuration options of the dial



Determination of the high tide coefficient

This constant will allow you to display on the screen the approximate coefficient of each high tide. In order to determine the constant which will be used to calculate this coefficient, you must proceed as follows:

- calculate the constant manually, taking 2, 3 or 4 data of tides that have taken place previously, from an official tides table
- perform the following calculation: known coefficient of high tide / (high tide height - low tide height) = constant
- example:
 - coefficient of 111 on 4/28/2021: $111 / 5.46 - 0.54 = 22.56$
 - coefficient of 24 on 9/30/2021: $24 / 3.68 - 2.56 = 21.42$
- by taking the average of these 2 constants $((22.56 + 21.42) / 2)$, you get an approximate average value of **22**
- finally, enter this constant of 22 in the option field labeled "**Tide Coefficient**" of the settings page of the watch face (or in the menu "**Tides → Options → Tide Coefficient**" for users of the HIGH 1024 version)
- then, when you are on the display of a high tide, the screen will present the value of the coefficient (111, or 24, according to the example above)

— Note

you have 2 possibilities for displaying this coefficient:

- either by selecting it as the new data field for one of the 2 fields at the top of the dial
- either by automatically displaying it in the label of the height of the tide



At the very first start / launch of the watch face, you get the following display, instead of the tide information, a 8-digit identification number: xxxx - xxxx.

It is this identifying number that you will need to communicate to me by email, so that I can calculate your personal activation code, once you have paid for it via one of the 2 PayPal buttons located at the top of this page.

Once your activation code has been received, you will need to enter it, either via the integrated menu on the dial ("**Tools → Activation Code**" menu), or via Garmin Connect. The code, as well as the identifier, are permanently stored on the watch.



Display when no data is available in the tide data storage table.

It happens:

- at the very first start of the application, when no request has yet been executed
- when a query has already been executed, but the array is empty; you must then restart a new query

Other functions

In addition to tide data, the sundial can display up to 30 other data, in the 2 fields at the top of the sundial, example:

"Sunrise", "Sunset", "UTC Time", "Battery", "Steps Number", "Steps Goal", "Calories", "Distance", "Floors Up", "Floors Down", "Altitude", "Temperature", "Pressure", "Heart Rate", "O2 Saturation", "Week Number", "Notifications", "Seconds always on", "Solar Intensity", "High Tide Coefficient", "Garmin Weather", "Wind Data » etc.

Some of these data (such as oxygen saturation or Garmin weather) may not be available on some models, due to their incompatibility.

At the bottom of the screen, 4 notification icons inform you about the status of certain functions:

- blue ball → connection status of the watch to the smartphone (connected / disconnected)
- orange ball → message notification status
- purple ball → "do not disturb" mode on / off
- red ball → alarm activated / deactivated

The colors of all the elements (background, lines, values, labels) can be modified independently, according to your choice.

Note for owners of an AMOLED screen watch

these models have an internal screen backlight check function that prevents pixel burn-in when the screen stays on for too long (more than 3 minutes) on a watch face type display. For this reason, it is therefore not possible to have a complete and detailed watch face permanently displayed on screen in this low power operating mode (watch / dial at rest).

Thus, in this low power mode, the display becomes minimalist, to display only the hours and minutes. This minimal display alternates every minute between a horizontal and vertical display of the time, to prevent the same pixel from being in the ON position for more than 3 minutes.

When the watch goes into high power mode (wrist twist, or when you raise your arm to view the screen, etc.), the standard and full display of the dial appears again, to then return to minimalist mode after a certain lapse of time, and so on.

This operation is completely normal, and required, and therefore in no way constitutes a malfunction of the dial!

Complications

Finally, the watch face also manages the native default operation of watch face applications installed on watches equipped with a touch screen, what Garmin has named Complications: a long press on the screen, in the area of the desired field, will open and launch the corresponding widget, if it exists and/or available on the watch.

Complications
Lancement rapide des widgets / Widgets quick launch

La FC est affichée ici, c'est le widget fréquence cardiaque qui est lancé The HR is displayed here, this is the heart rate widget that is launched

Un appui long ici ouvrira toujours le widget des notifications
A long press here will always open the smart notifications widget

Le champ de droite affiche la météo, c'est donc le widget météo qui est lancé
The field on the right displays the weather, so it is the weather widget that is launched

Ecran principal / Main screen

Champ configurable
Configurable field

Données de la précédente marée
(heure et hauteur en mètres ou pieds),
ou coefficient + hauteur prochaine marée

Previous tide data
(time + height in meters or feet),
or coef. + height of the next tide

Alarmes / Alarms

Connecté au smartphone
Phone connected

Notifications

La jauge de marée indique le niveau actuel avant d'atteindre le prochain horaire de marée

The tide gauge indicates the current level before reaching the next tide time

Prochaine marée = basse
Next tide = low

Prochaine marée = haute
Next tide = high

Nombre d'horaires restant dans le tableau stocké
Nb > 4 = cercle plein

Number of remaining schedules in the stored array
Nb > 4 = filled circle

Secondes affichées en permanence (OUI ou NON)
Seconds always on (YES or NO)

Données de la prochaine marée
(heure / décompte + hauteur en mètres ou pieds)

Next tide data
(time / countdown + height in meters or feet)

Descriptive images

Main screen

La jauge de marée indique le niveau actuel avant d'atteindre le prochain horaire de marée

Ecran principal / Main screen

The tide gauge indicates the current level before reaching the next tide time

Jauge bleue = marée montante
7 horaires de marées restant dans le tableau

Blue gauge = rising tide
7 tide times remaining in the table

Précédente marée (status / heure / hauteur)
Previous tide (status / time / height)

Heure, décompte et extrême de la prochaine marée
Time, countdown and extreme of the next tide

Jauge rouge = marée descendante
5 horaires de marées restant dans le tableau

Red gauge = falling tide
5 tide times remaining in the table

Acquiring the Lat-Lon GPS coordinates of the spot

Tides

No GPS Coord.
Get Location!

View Tides

Status

Success!
43.797664,-2.499776

Tides

GPS Coord.
43.797664,-2.499776

View Tides

Aucune position acquise

Une position GPS vient d'être acquise

Affichage immédiat de la position dans le menu

Some of the integrated menus

Menu of tides table

Table

2021-11-27
4:28 • low • 1.03 m

2021-11-27

2021-11-27

2021-11-28
4:52 • low • 1.15 m

2021-11-28

2021-11-28
07:03 • low • 0.78 m

2021-11-28

Première donnée du tableau stockée

Donnée suivante, première marée du jour suivant

Dernière donnée du tableau stockée

Options of the tides menu

View Tides

Force Collecting
Tides Forecast

Options

Options

3 Day(s)

3 Day(s)
Forecast

API Used

API Used
StormGlass

Force l'acquisition de nouvelles données en lançant une nouvelle requête, même si le tableau stocké contient toujours des données. Cela permet d'actualiser le tableau à la date / heure d'exécution de la requête

Nombre de jours de prévisions que prendra en compte la requête web, de 1 jour minimum à 5 jours maximum

Site web utilisé pour la requête web, soit StormGlass, soit WorldTides Info, au choix

List of all the menus of the app

Tides	
<p>No GPS Location</p> <p>Get Coordinates !</p>	Menu for retrieving and viewing the GPS coordinates of the location where the tide data will be assigned
<p>View Tides</p> <p>Table</p>	View tide times plus other information that has been collected and stored in the app
<p>Force Collecting</p> <p>Tides Forecast</p>	This menu allows you to force the re-collection of tidal data from the data provider, in order to update them to the current day and time.
Tides - Options	
<p>API Used</p> <p>StormGlass / WorldTides</p>	Selecting a tidal data provider. If you select a provider here for which you have not registered an API key, nothing will happen; you will never receive any tidal data.
<p>3 Day(s)</p> <p>Forecast</p>	Number of days of tide data to store in the data table
<p>StormGlass</p> <p>MSL / MLLW Format</p>	StormGlass uses two tide calculation formats, MSL format and MLLW format, this menu allows you to choose the one that suits you best
<p>Tidal Coefficient</p> <p>22.0</p>	This menu allows you to enter the coefficient to be assigned to obtain a correct and precise calculation of the height of the tide, depending on the region of the world where you reside.

Fields to Display	
<p>Field 1</p>	Data type you want to assign to the upper left field
<p>Field 1</p> <p>Color</p>	Color of the data assigned to field 1
<p>Field 2</p>	Data type you want to assign to the upper right field
<p>Field 2</p> <p>Color</p>	Color of the data assigned to field 2
Colors	
	Choice of colors that you wish to assign to the other data present on the dial (background color, lines, time, etc.)

Options	
Previous Tide Data Hide / Show	Displays or not displays the data from the previous tide on the screen
Tide Data big/small display	Font size for displaying tide data
Height / Coeff big/small display	Font size for displaying tide height data + coefficient
Sunrise/Sunset Location Let / Reset	Allows you to reset your GPS location to obtain sunset/sunrise times (in case of location change (movement, travel, etc.))
Short Date Format No / Yes	Date display format
Moon Phases Icon No / Yes	Display or not the image of the phases of the moon (the corresponding field must have been previously selected in the "Fields" menu)
Show Seconds Dot No / Yes	Scrolls or not, all around the screen, a ball indicating the seconds
Custom Time City Name	Allows you to set a custom time (the corresponding field must have been previously selected in the "Fields" menu)
Military Format No / Yes	Whether or not to display the time in military format

Tools	
Activation Code	Displays the application's ID number and allows you to enter your activation code . Once this has been entered and is valid, it cannot be changed.
App Version	Displays the app's version number and the date it was released to the Garmin store. This lets you know if your app is up to date with its latest version or not.

