With the sun hour

on the sundial

here

3:30 PM

April 10th

How to get

the legal hour
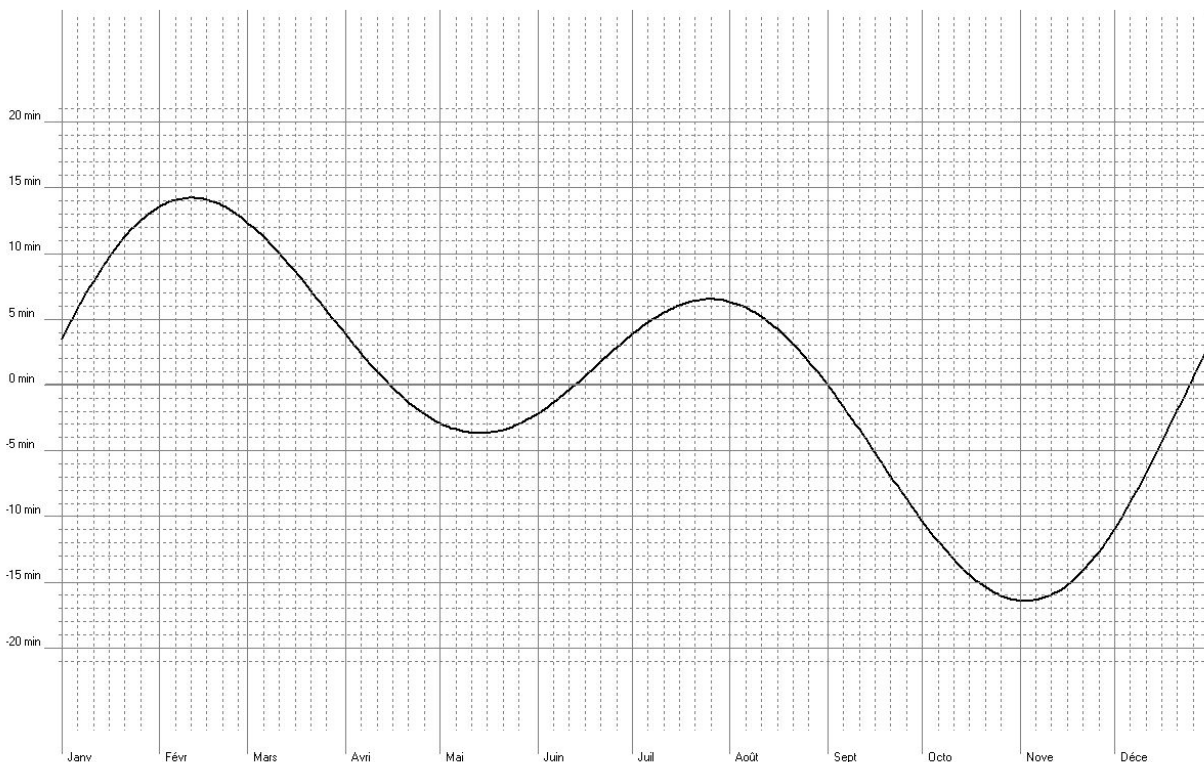
here

5:43 PM

You need to make 3 corrections (See explanations over leaf)

3:30 + 2h. (1) + 12min. (2) + 1min. (3)   =   5:43

(1)   add 1 hour in Winter or 2 hours in Summer, administrative decision

(2)   the longitude, we are not on Greenwich meridian

Plouha : 3° West   add 12 min.

(3)   the Equation of time, the length of the day is not exactly 24h

add the value of the curve: on the 10th April, add 1 min.

EQUATION DU TEMPS MOYENNE (Rc+ Re = EQ), an : 2005 Moyenne 4 ans Jull./ Grég.
(Rc, réduction au centre en rouge, Re réduction à l'équateur en bleu .)
Colonnes les 01, 6, 11, 16, 21, 26 et premier jour du mois suivant, à midi .

Janv	Févr	Mars	Avri	Mai	Juin	Juil	Août	Sept	Octo	Nove	Déce

20 min
15 min
10 min
5 min
0 min
-5 min
-10 min
-15 min
-20 min

But, wouldn't it be better to live with the sun ?

Longitude :

The sun «goes around» the earth in 24h, or 15° per hour. Legal hour in our time zone corresponds to sun passage at Greenwich meridian. So you must take into account the longitude difference:

Montreux-Château	7° 00' East	- 28 min.	Sun will arrive at Greenwich meridian later
Bruz	1° 45' West	+ 7 min.	Sun has already passed at Greenwich
Plouha	3° West	+ 12 min.	

And if you come from Italy, Germany or Holland, you gain one hour of sunlight in the evening !

4° O	2° O	0°	2° E	4° E	6° E	8° E
+16 min	+8 min		-8 min	-16 min	-24 min	-32 min
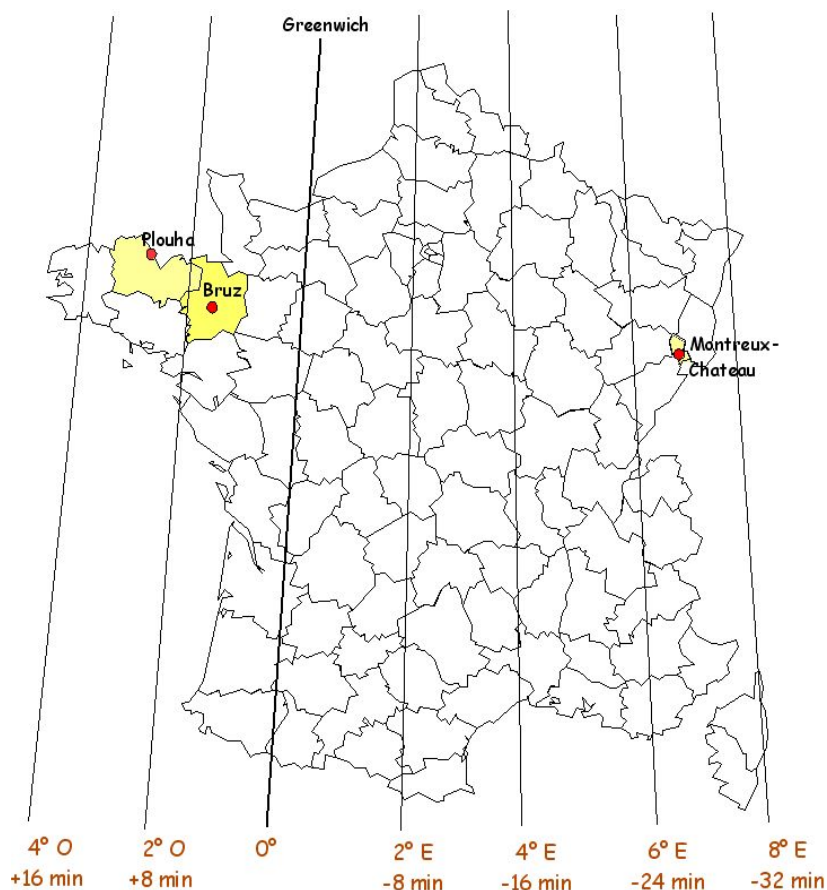
Equation of Time:

The duration between 2 passages of the sun on the local meridian is not constant, due to 2 causes:

- the earth inclination on the ecliptic

- The elliptical mouvement of the earth around the sun

On a daily basis the differences are negligent on a sundial but they grow to a maximum of plus or minus 16 min. The equation of Time shows this difference in minutes depending on the day of the year.

Compared to the « true » hour which is noon when the sun is passing the meridian, you need to use the equation of time correction in order to get the « mean » hour where 2 consecutive noons are separated by a mean day of 24 hours exactly. This correction often appears as an 8, especially on meridians. Examples (see the graph over leaf):

February 1st   add 13 min.

August 5th   add 6 min.

October 1st   substract 10 min.

No modification on April 15th, June 14th, September 1st and December 25th (for Christmas presents)