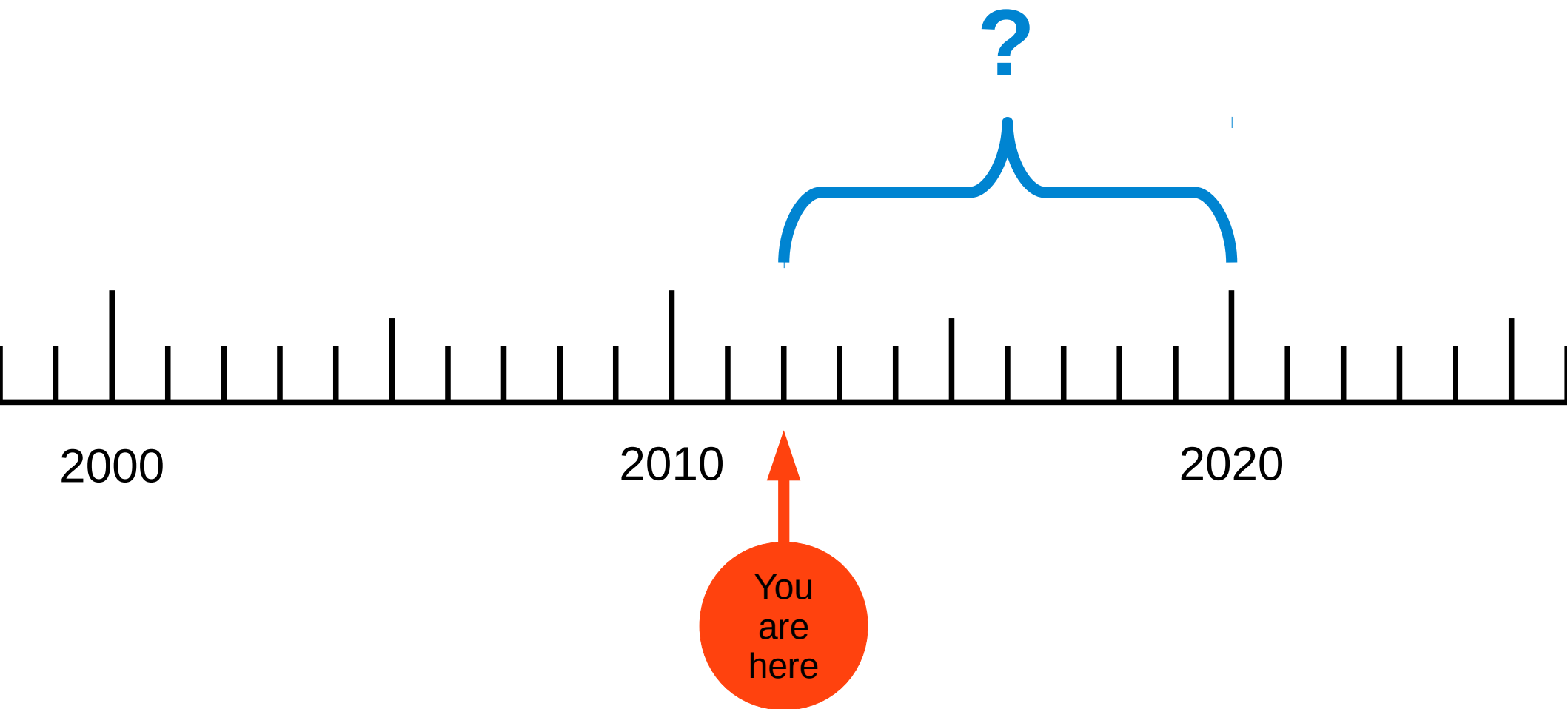


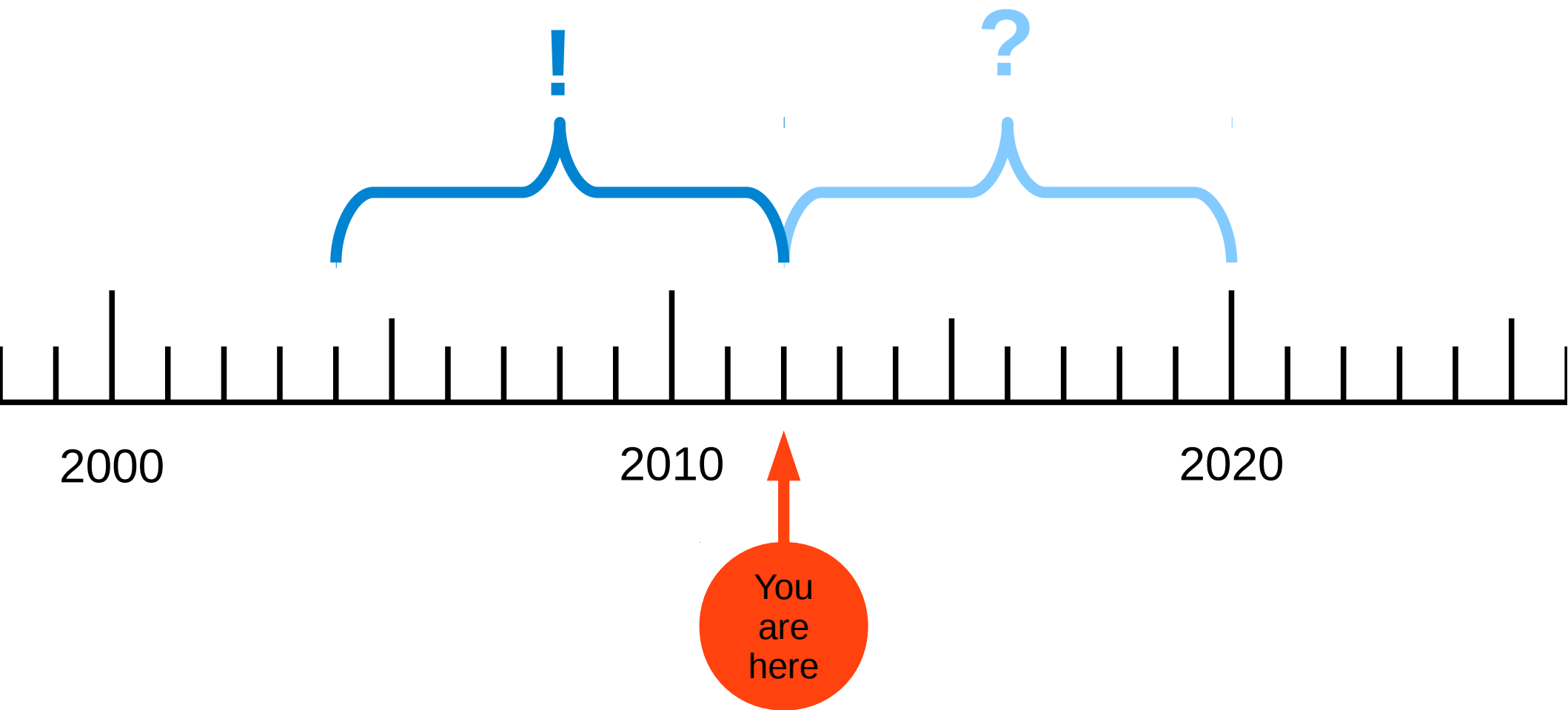
Varnish 2020 Vision

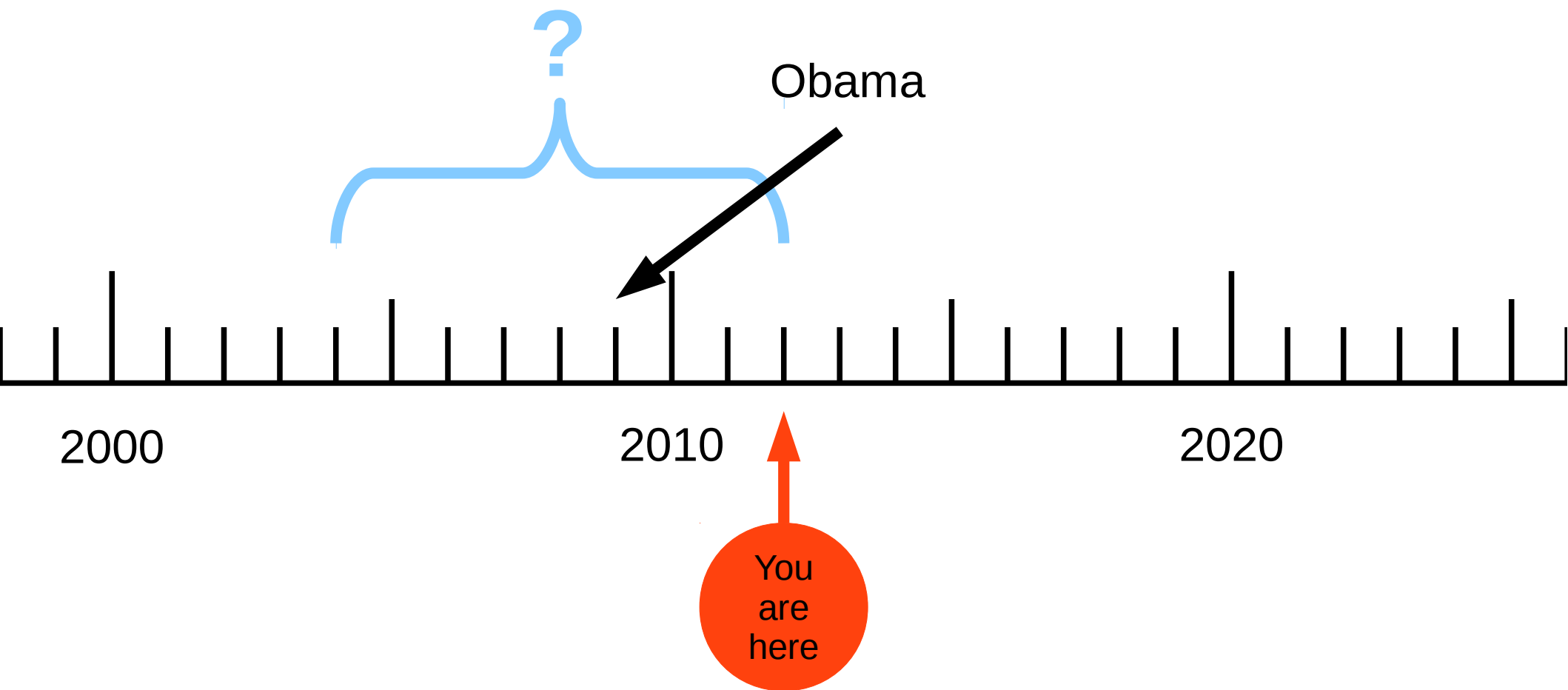
- with less than 20/20 vision

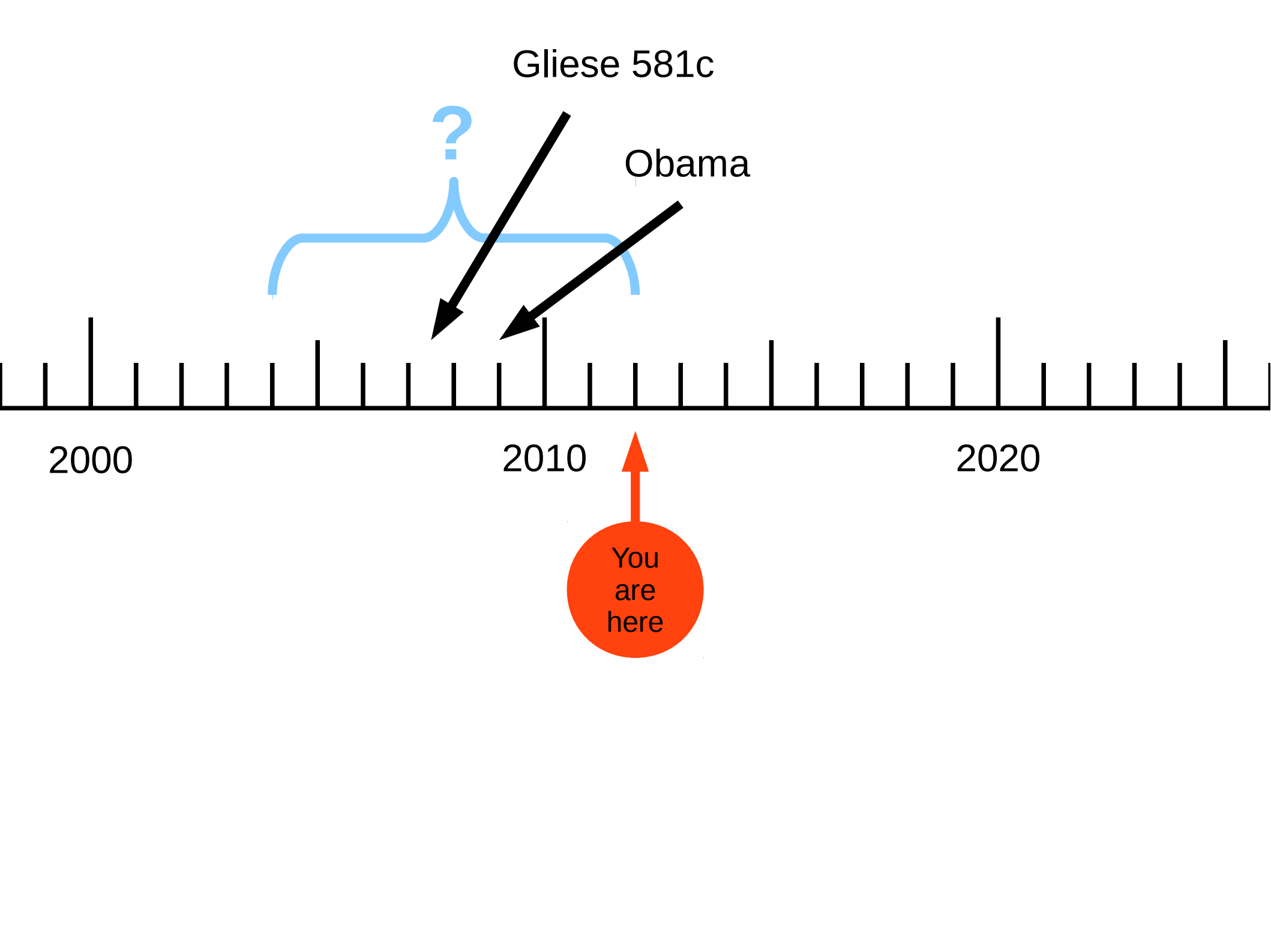
Poul-Henning Kamp

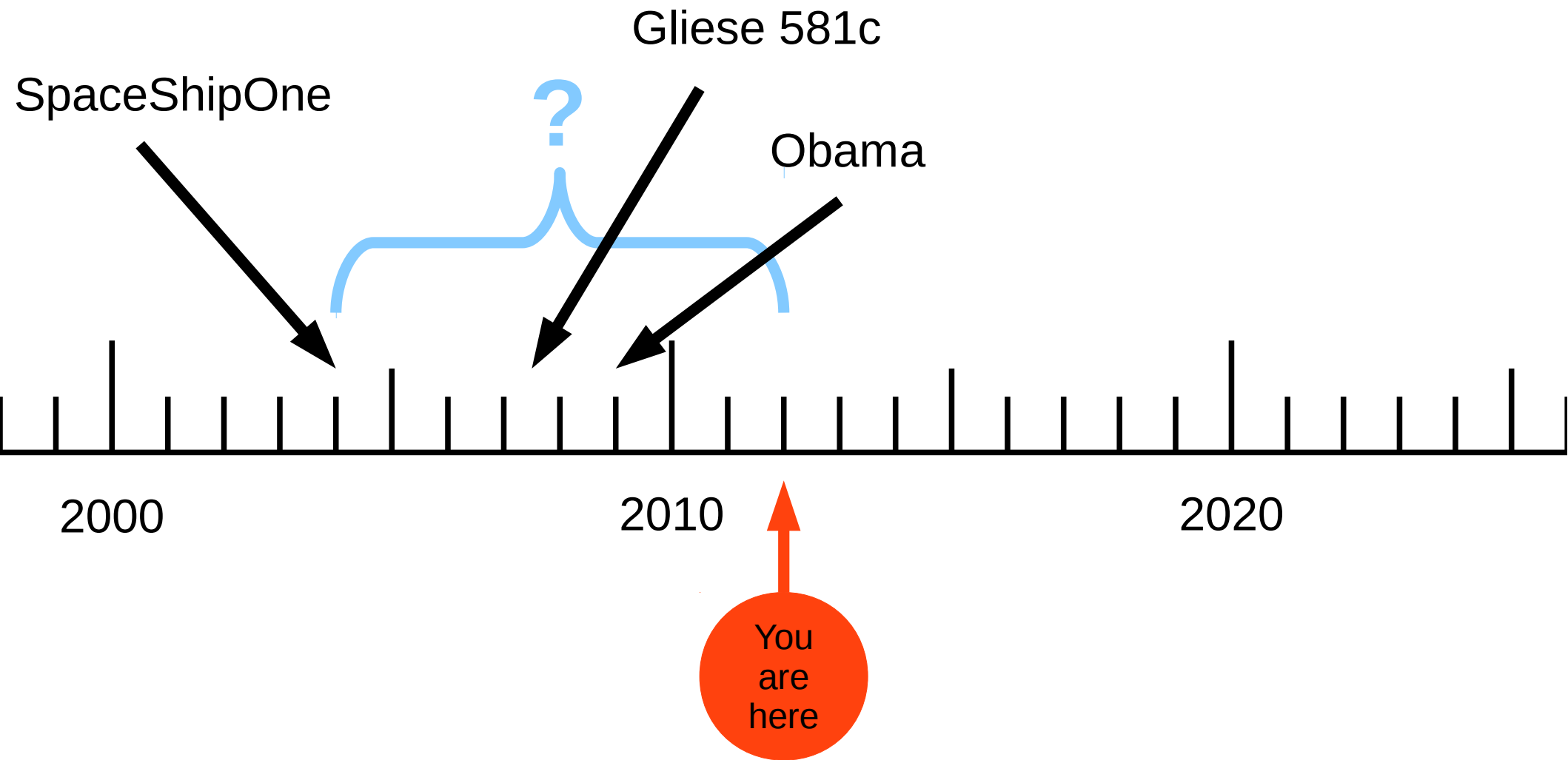
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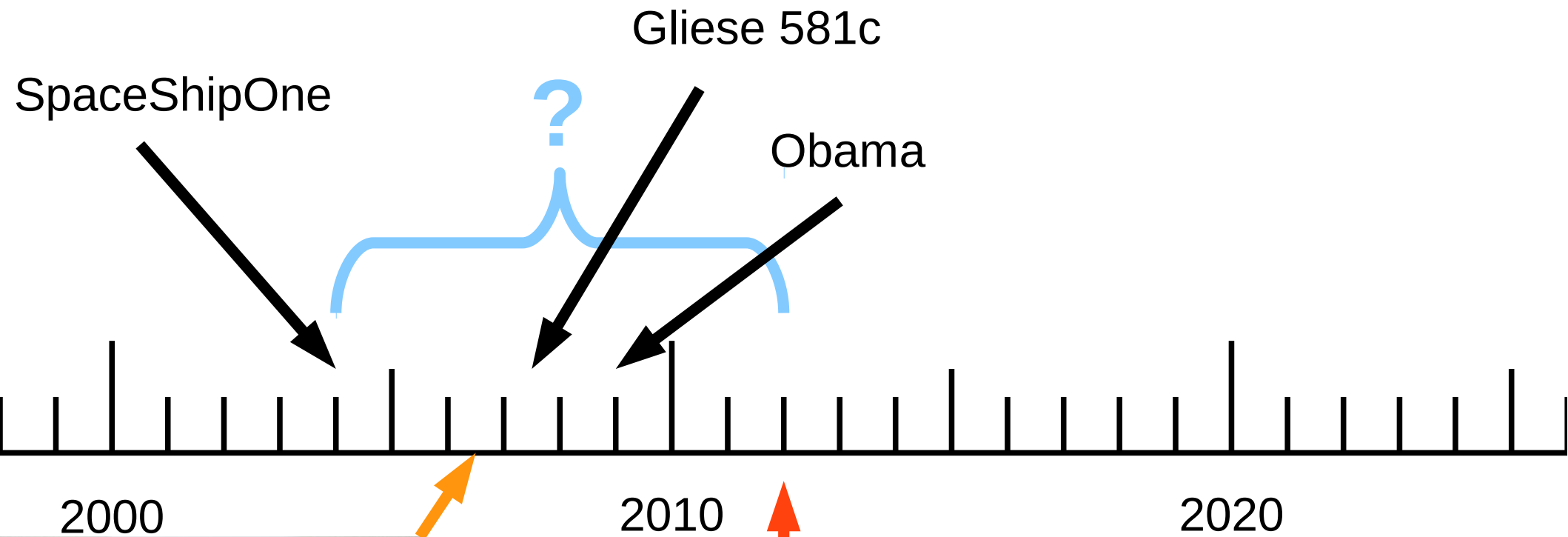


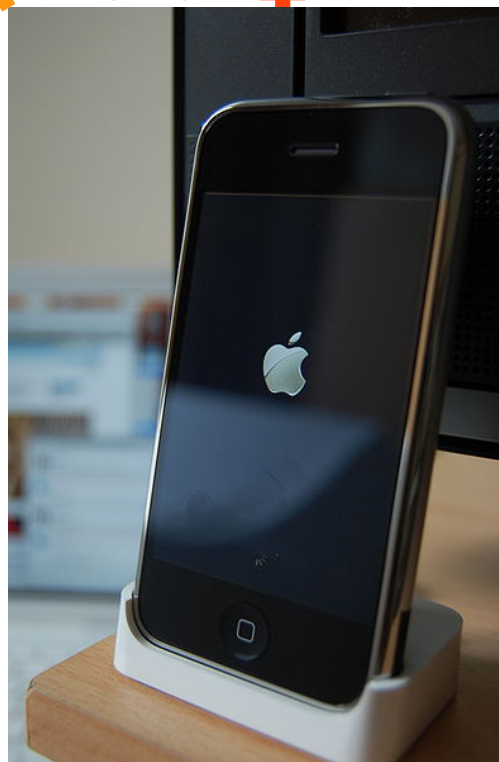
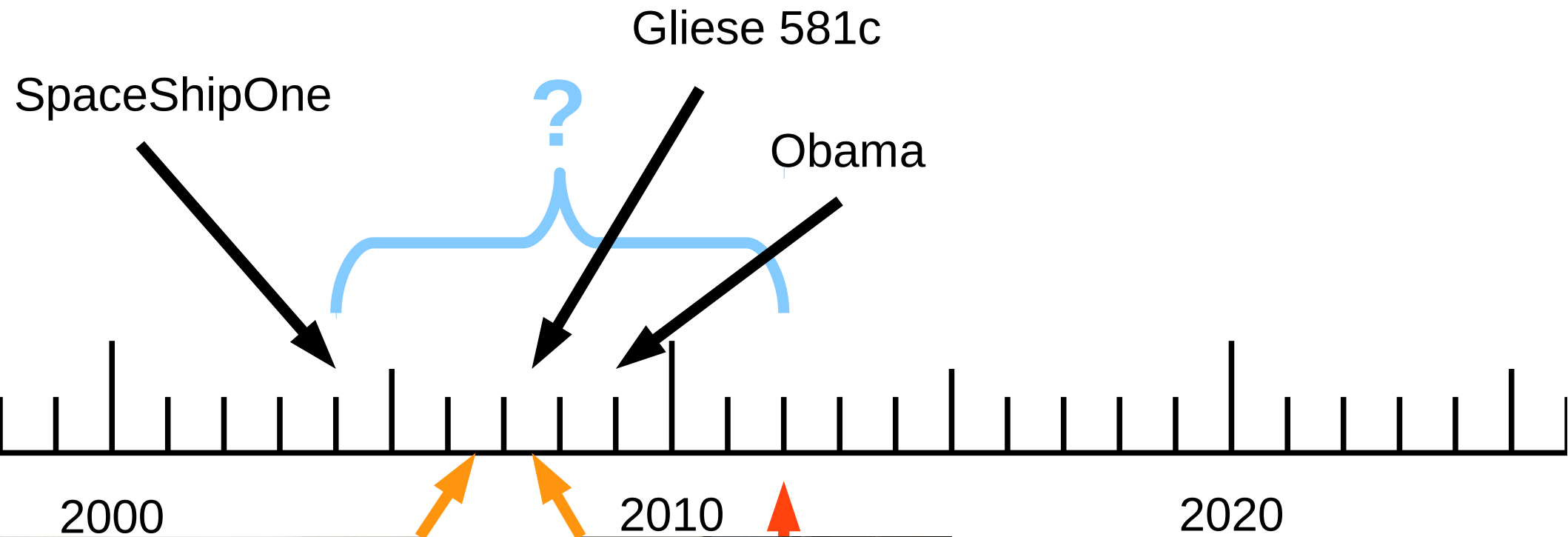












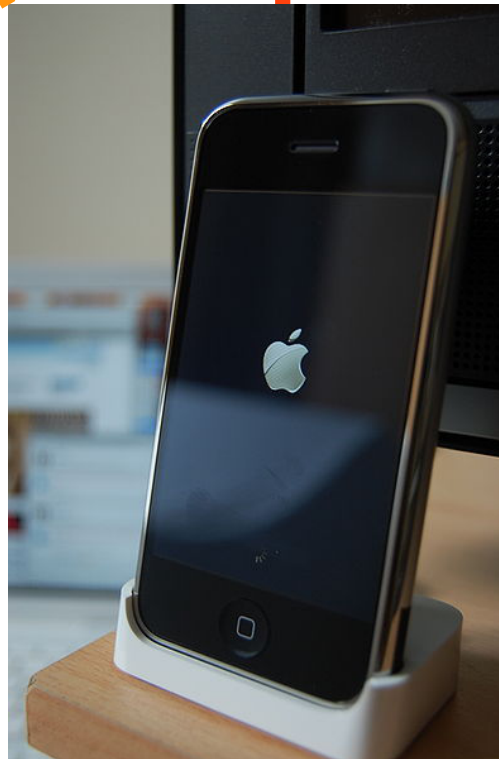
Varnish

?

2000

2010

2020



Varnish

?

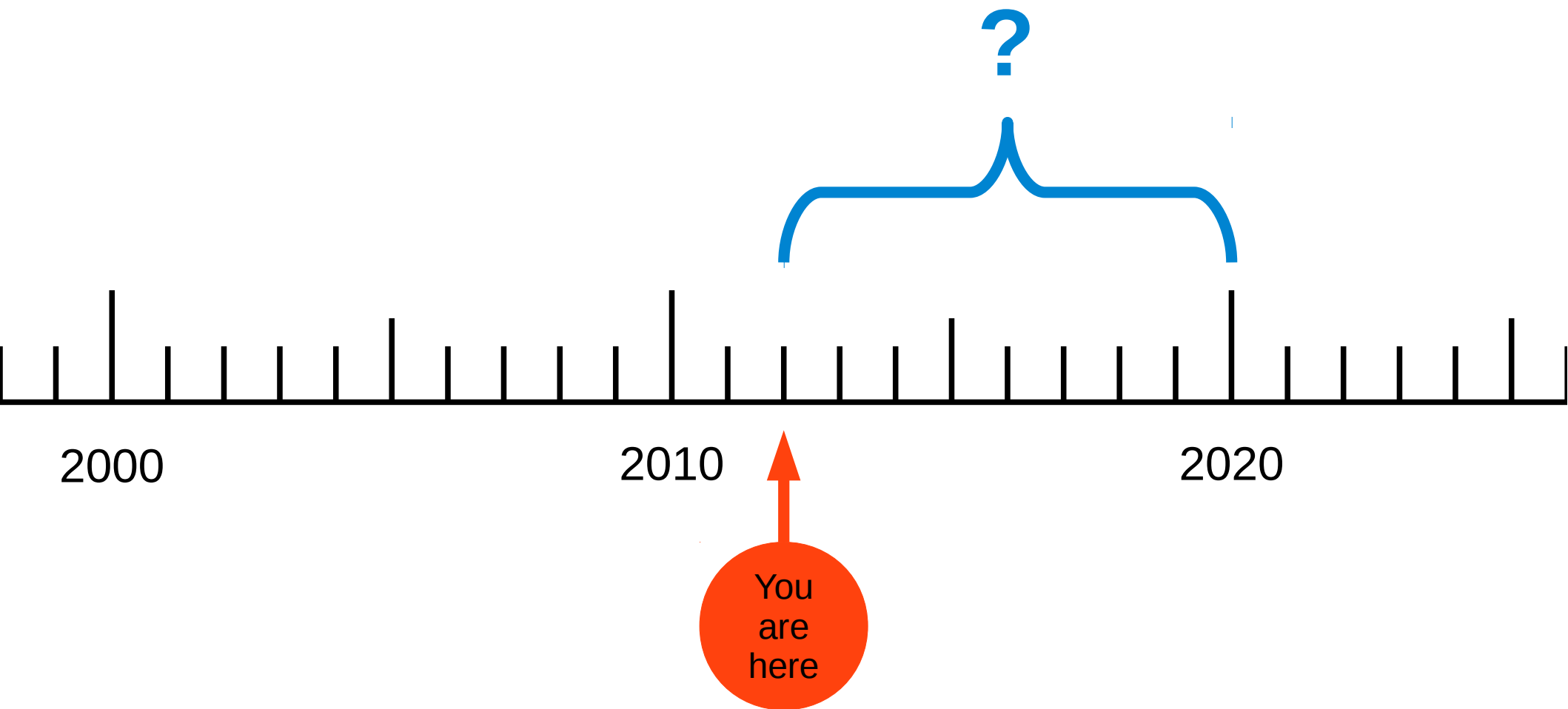
VUG1

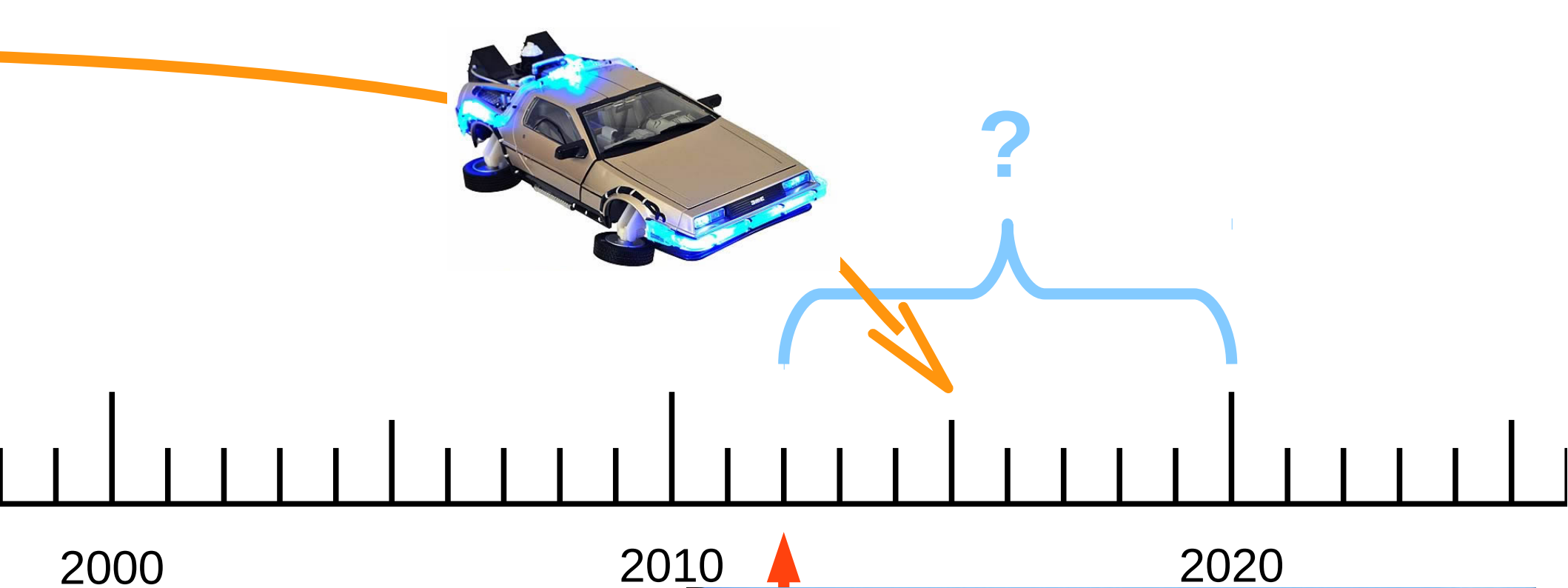
2000

2010

2020









2



Some of my predictions

1985: "Z8000 is going to eat M68k before breakfast"

1989: "Windows doesn't have a chance against X11 windows"

1994: "Reliable 100 mbit/s ethernet on twisted pair ? Forget it!"

1995: "This is just a temporary way to scramble passwords."

1998: "We're screwed if we don't support IPv6 by 2000."

2000: "Nobody is going to elect that coke-head."

2004: "...certainly not again."

2006: "Varnish will probably have 10-20 users."

Varnish past, present and future

2006: A web cache	Caching, VCL, bans
2009: A HTTP afterburner	+ESI, +purges
2012: The HTTP delivery engine	+Vmod, +gzip (+Streaming, +IMS)

What is missing from Varnish?

What don't we know about yet, which Varnish will need ?

A'la Carte:

More scalability:

NUMA

10G, 40G net

SSD

Better everything:


Reporting

Stability,

Error handling,

Robustness,

Documentation



We know how to do this,
We just need the time (=money)

A'la Chef:

Content-munging:


- Inspection of POST/PUT bodies
- Buffered ESI delivery

Virtualization:

- Multiple VCLs

New Protocols:

- UNIX-sockets
- fastcgi
- SCTP
- HTTP/2.0
- SPDY
- SSL



We have (some) ideas
May not work out first try
Architectural impact
VCL impact
= More time & money

A'la Chef:

Content-munging:


- Inspection of POST/PUT bodies
- Buffered ESI delivery

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- fastcgi
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- HTTP/2.0** ←
- SPDY
- SSL



We have (some) ideas
May not work out first try
Architectural impact
VCL impact
= More time & money

HTTPbis

IETF-WG

Started 2007

Charter: "Clarify RFC2616"

HTTPbis

Status 2012: "Last Call"

-> draft-ietf-httpbis-p1-messaging-19	92pgs
-> draft-ietf-httpbis-p2-semantics-19	73pgs
-> draft-ietf-httpbis-p3-payload-19	43pgs
-> draft-ietf-httpbis-p4-conditional-19	28pgs
-> draft-ietf-httpbis-p5-range-19	28pgs
-> draft-ietf-httpbis-p6-cache-19	47pgs
-> draft-ietf-httpbis-p7-auth-19	22pgs

	333 pages

HTTPbis

Status 2012: "Last Call"

-> draft-ietf-httpbis-p1-messaging-19	92pgs
-> draft-ietf-httpbis-p2-semantics-19	73pgs
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-> draft-ietf-httpbis-p6-cache-19	47pgs
-> draft-ietf-httpbis-p7-auth-19	22pgs

	333 pages
-> RFC2616	176 pages
	= +89%

HTTPbis

Two days ago

New Charter: HTTP/2.0

HTTP/2.0

Brought to you by the **creators of such hits as:**

RFC 1327 Mapping between X.400(1988) / ISO 10021 and RFC 822

HTTP/2.0

Brought to you by the **creators of such hits as:**

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RFC 1698 Octet Sequences for Upper-Layer OSI to Support Basic Comm

HTTP/2.0

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The Overnight Sensation: The Record Shattering: IPv6

Coming to your network!
(any year now...)

HTTP/2.0

Desires:

Speed

Pipelining

Multiplexing

Header compression

Trust

Privacy

Integrity

Identity

Authentication

Service

Sessions

HTTPbis

IETF-WG

New Charter: HTTP/2.0

Option one:

Goldplate SPDY call it HTTP/2.0

Good because:

Exists, tested, ~~works~~ not obviously broken

Bad because:

Driven mainly by Googles agenda

Not suitable for ~~porn~~ multimedia sites

SSL is mandatory

HTTP/2.0

Desires:

Speed

Pipelining

Multiplexing

Header compression

Trust

Privacy

Integrity

Identity

Authentication



Why Google wants SPDY:

A) Prevent telcos from messing with data

B) Know who's at the other end.

Service

Sessions

HTTP/2.0

Desires:

Speed

Pipelining

Multiplexing

Header compression



SPDY has these



Benefits eaten by:

=> SSL

Trust

Privacy

Integrity

Identity

Authentication



Service

Sessions

HTTPbis

IETF-WG

New Charter: HTTP/2.0

The big issue, either way: How to deploy and upgrade ?

Avoid RTT penalty:

get Send HTTP/1.1 request with "I can also do 2.0" marking
 HTTP/1.1 response
or
 HTTP/2.0 response

HTTPbis

IETF-WG

New Charter: HTTP/2.0

Option two:

Split transport and semantics
Pluggable transport protocol

HTTP over:

TCP (=HTTP/1.1)

SSL (=HTTPS)

SPDY

UDP

SCTP

ECMA-10

...

Quo Varnish ?

Whatever HTTP/2.0 becomes, Varnish will do it.

=> Relatively vast architectural impact

=> Generally pluggable protocols or just SPDY ?

=> Semantic translations client <==> backend ?

=> Varnish will be an obvious HTTP/2.0 upgrade path

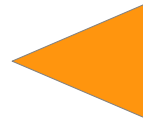
Quid Varnish ?

Development time paid by Varnish Moral Licenses

<http://phk.freebsd.dk/VML/>

Licenses:

Varnish Software
Facebook
Wikia
others



Applause!

Stats: 2009-12 ... 2012-03:

75 h/month \approx 50% time \approx 8.400 EUR/month

Looking for new VML's to fill in for Wikia, who outsourced their CDN