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# Time

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Abstract: What is Time? Does time have a beginning? Can we time travel?

#### 1. Introduction

Time can be defined as the duration of a event. We consider 9,192,631,770 cycles of the radiation produced by the transition between two levels of cesium 133 atom as 1 second and calculate the other measurements like hour, a day, a month, a year. So there rises a question does time have any beginning may be yes or maybe not. Can we travel in time? May be yes and maybe not.

### 2. Does Time Have Beginning

Now again let's consider the definition of time "Duration of event" let's go back to the origin of universe. There are many theories about the origin of universe the mostly accepted theory is the BIG BANG THEORY. According to big bang there was singularity which is highly dense and consists of everything that is right now in the universe that includes us. Now big bang is a event so time should already exist before the big bang. So time exists before big bang. But what if the time began since then at the particular instance when big bang occurred? Here comes a theory which may be give us the answer about it. Black hole is a massive object which attracts anything to a single point know as singularity. Just as singularity discussed above at big bang. These black holes have very high gravity that even light cannot escape. It is known that time stops when it enters the event horizon of the black hole. So there are no events at that singularity so time has a beginning.

#### 3. Can we time travel

Time travel is a field which is completely complicated. The first thing to be observed is that we travel with time not in time. consider time as a big infinity plane of past, future and present. Like a infinity road that you walk on. Now consider coming out of our house and the point where you step on road is present and moving forward is future and moving back is past. So if time a road or plane of all the events then this is possible moving to past events and future events. Now this thing is possible if time is a dimension. Now what if time is not a dimension. Is time travel possible? May be yes again. We know that nothing can travel a faster than light. What if we travel faster than light as travel between two point in space. So we can say that time travels at speed of light. So if you travel faster that light we leave time behind to we are in future in relative to other events.

### 4. Conclusion

The above research was the best of my knowledge and as read from the reference books.

## References

- [1] Einstein's theory of relativity
- [2] A brief history of time- Stephen William hawking

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