The Black Hole

by Syed Sabbir Ahmad

NE of the most interesting phenomenon of our universe, which until now was confined to only theoretical predictions, is the blackhole.

From various observations imade by scientists, the existence of black hole is now confirmed. There are many examples of black hole throughout the universe. To understand how black holes are formed one must understand the formation and end of a star. The following is a description of these concepts in a very simple way.

The most abundant element throughout the universe is hydrogen. When a huge cloud of gas containing hydrogen and other elements gathers somewhere in space, it starts to collapse in on itself due to its own gravity arising from the attractive force working between the atoms in the cloud gas. This attractive force causes the atoms to collide with each other and as a result hydrogen atoms fuses together to form helium, producing a huge amount of heat and energy. This is what makes a star shine.

The heat causes the gas to make a pressure and as a result the star tries to expand. But at the same time the gravitational force of the star tries to make the star contract. It's the balance between these two that makes the star stable.

When the hydrogen fuel is - all used up the star begins to contract and a one point it becomes highly dense and small. At this stage its the balance between the gravitational force of the star and the repulsive force acting among the densely populated atoms that makes the star stable. But there is a limit to this repulsive force. When the star is sufficiently dense the repulsion force becomes less than the gravitational force. A star with mass more than one and a half the mass of the sun is incapable of supporting itself against its own gravity. This mass over which a star cannot support itself is called Chandrasekher limit (CL) (named after astronomer Subrahmanyan Chandrasekher who suggested this concept).

The Chandrasekher limit determines the fate of a star. A star with mass less than C L stops contracting and becomes 'white dwarf' with a radius of a few thousand

Dear Diary : My life is not

perfect. There are many

things that I want to change.

I wish to make a new start so

I am looking for a perfect day

to begin. The new year seems

just right. The 1st day of a

year is in itself a good omen.

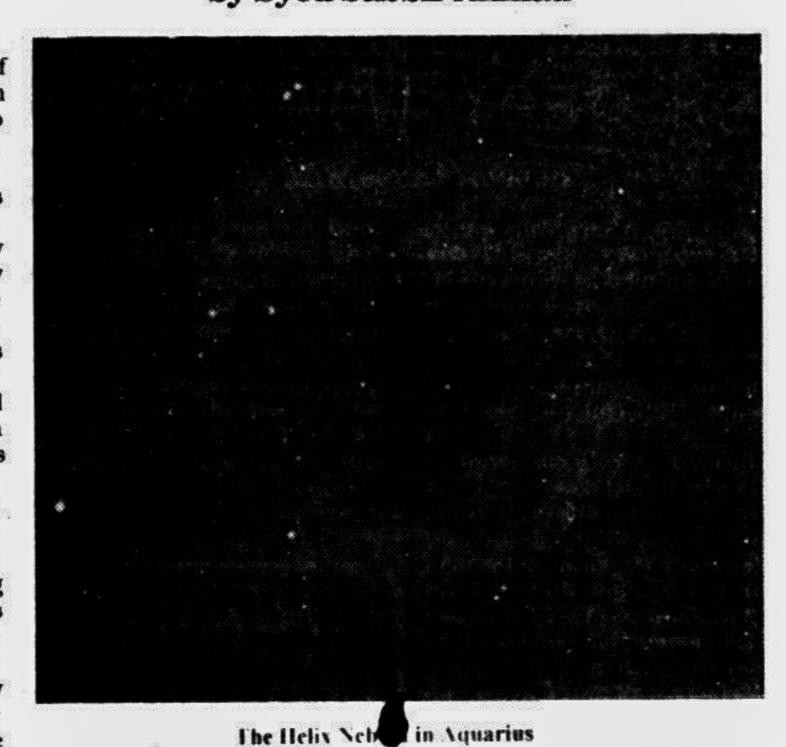
A new year, a new begin-

ning and so a fresh start. I

can start doing all the right

things. To help me out, I

have made a long list of "do's"





The Andromeda Glaxy in Andromeda

From a Diary, New Year Resolutions

by Muneera Parbeen

White dwarfs are so dense that the repulsive forces within the star is between the electrons of the atoms. As an example, there is a white dwarf orbiting around the star Serious. In stars with mass of one or two times that of the sun, the repulsive force is between the neutrons and protons of the atoms rather than electrons. This type of star is known as "Neutron star'. Neutron stars and are so dense that a a cu- Nibula in Aquarius. bic inch of star matter weighs hundreds of millions

In the case of stars with mass greater than Chan-

las doing my work on time,

getting up early, going on a

diet to lose weight, exercis-

ing etc etc] and "don'ts" [as

not losing my temper so

easily no late nights, cutting

Year Resolutions is long as

have been planning for this

for a long time, in fact a few

years now. Everytime some

thing goes wrong and I lose

Actually the list of New

down on fast foods etc.

drasekher limit a most viophenomenon takes place. These stars looses their excessive matter by a huge explosion called 'Super nova. In this way the star reduces its mass below Chandrasekher limit and then it just becomes a white dwarf. There are many evidences of white dwarfs with a faint (in some case prominent) ring of cloud around it. The ring is the rejected matter of the have a radius of only 10 mile star. An example is the Helix Not all massive stars end

up in super nova. There are stars with masses so great that when their fuel is used up and starts contracting, the

weight of the matter is so great that it continues to contract until it becomes a point in space. This point is

also infinitely dense. We know that stars and planets form a gravitational pull around itself. The more massive the object is the greater is the gravitational pull. In the case of the point mentioned above, the gravitational pull is so great that everything around it tends to tall on it. Up to a certain distance from the centre of the point the gravitational pull is so great that even light cannot escape its force.

So a region in space is formed from where nothing can reach us. This region is known as 'black hole'. The point mentioned above is called the 'singularity' and the edge below which light cannot escape is known as 'the event horizon'.

Since nothing can escape a black hole, they are not visible through a telescope. Their existence is confirmed by the physical properties of the matter surrounding them. There are objects which appear to be massive (some scientists suggest them to be a combination of many galaxies) and very far away. These objects emit huge amount of energy which is possible through the gravitational collapse of a whole central region of a galaxy.

Therefore, scientists predicts that there might be massive black holes residing at the centre of these objects known as "Quasars'. Another example is the star Cygnas X-1. It is a binary star system but only one of them is visi-

Cygnas X-1 is a great source of X-ray. The explanation of this X-ray is as follows : The hidden star is a black hole and it attracts matter from the visible star, which when falls on to the black hole, gets heated and emits X-ray. The mass of the unseen star is calculated as six times the mass of the sun. which, according to Chandrasekher limit, is too great to be a white dwarf or a neutron star.

In May 1994, a massive black hole (more massive than 2 billion suns) was discovered at the core of the giant elliptical galaxy M87. 50 million light years from Earth. Recently, scientists are bringing evidence of a black hole at the centre of our galaxy 'The Milky Way'.

So many things hap pen around us every ▲ V ▲ day but the news we read or hear does not always reflect the whole truth. There is so much to know

beyond the headlines. Take, for instance, the budget crisis in the US. -Contrary to what you might have heard, the crisis had nothing to do with balancing the budget in seven years or ten. In fact, it was something much closer to the US national interest. Let's imagine the conversation that might have taken place between Bill Clinton and Newt Gingrich before the US Federal Government shut-

down. Newt: Bill, you knew there was going to be a crisis over balancing the Budget but you didn't want to discuss it with us. Then, Rabin got shot and we flew to Israel. But on the flight back you didn't take about it then either. You directly snubbed me on the plane, Bill.

Bill: Newt, you know that isn't true. You've seen the photo and you very well know that we talked on the plane.

Newt: But ... but, you weren't paying attention. Bill: You know the truth but

you just won't admit it. Newt: You snubbed me when we were getting down from plane, as well. You

the rear exit. Bill: What was I supposed to do? You're the one who wanted to slide down the emergency exit ramp. In fact, you liked it so much you got up and slid down

made me get down from

it again. Newt: I don't care what you say. You've snubbed me and now you're going to pay. I'm going to shut down the Federal Govt. I'm going to show you no one snubs Newt and gets

away with it. Bill: You can't do that! You can't shut down the government.

Newt: Oh yes I can. Just wait and see.

So, the shutdown goes into effect and like all other govt. buildings, the White House is also empty except for two people, Bill and Hill who find out that life isn't much fun without

Imagine!

by Ahmad Zaki Choudhury

your personal valet. Even Chelsea thought it better to spend the week with friends. It's at times like these that you find out how tiresome answering the phone can be, oh, here comes a call from Russia.

Hillary: Hallo, the White House. Oh, Hallo Boris. Yes

waiting for a while Bill calls out - which way are the shredded bits supposed to come out?

- Well, let's see. They should come out this - Bill!! This is a FAX machine. - Oh, I'm sorry. I seem to

have sent something to the Washington Post. - Well, what was it?



! in ine.... No Bill's not in at the moment he's gone to throw out the garbage yes, I know you've sobered up.... yes, Boris I believe you've given up drinking..... Yes, I know your heart troubles are over....

Yes, Boris, I know you've in control of the country.... Okay, I'll ask the Russian ambassador to vote for you in the next election..... Yes, I know we're your only friends..... alright, bye dear.

After Bill returns, Hillary asks him to shred a pile of documents.

"Look, Bill, it's very simple. Just put it into the machine and that's all there is to it." So Bill puts a page into the

machine and presses the button. In it goes - but nothing comes out. After

- I don't remember. I just saw that it was marked confidential Audit Report. Rose Law Firm. Bill, you idiot!!!

- Well, Hillary why don't you do the shredding? You've got all that experience from whitewater..... If you've seen any news re-

ports about how much Bangladesh is falling behind other countries in many areas, don't buy those either. Bangladesh is a world leader in many aspects. We have a lot to teach the world. For instance, shutting down the government isn't a new idea, we've been doing it all the time. As for getting snubbed, that's happened here too. Imagine this bit taking place in a political party office in Dhaka.

- How dare she? How dare

she snub me? It's outrageous.

- Madam, would you mind explaining what hap-

pened? - A deliberate, direct insult, that's what I call it. Just think - I send her four

letters and she only sends me three. It's unthinkable! Yes, Madam I can see why you're upset but what can you do about it?

I'll make them pay, that's what I'll do about it. I'll call a hundred hartals, I'll call a hartal for a whole month! Let's see how many hours that comes to 30 times 24... uh. that's, uh.... well anyway, I'm going to make them pay. I'll squeeze the life

out of them! The outcome of this rhetoric is a historic event an unprecedented 15-day 360 hour hartal. The country comes to a standstill and. like everyone else, the Bishwas family are also affected. This quiet family. living in their cosy Bangabhaban cottage have to make do without their 7 drivers, 3 gardeners and 4 cooks who can't come because of the hartal. Mrs Bishwas has to answer the phone herself which is quite a bother ---

Hallo, yes speaking oh you, how wonderful to hear from you....no. Bishie isn't in now, he's out doing some gardening. Yes, I can see him now, pruning the roses it's actually quite hard for him, you know. with his shaking hand and all...." The words drift off and sud-

denly a large thud. From the other side, nothing can be heard except a distant voice saying. "She fainted after you cut off

her favourite white rose...." "Well, it was a mistake, you know what my hand's like...."

Enough of imagining for now, let me end this piece with something a friend of mine overheard in Washington, DC. — "If I'd only known what it's

like to throw out the garbage, then I'd never have gotten into this mess with Newt....."

[A few of the ideas have been taken from BBC World Service.

gold medals. They won most

of their golds in wrestling

and boxing. Pakistan for the

first time sent their women

athletes. In the fourth posi-

tion is our country

Bangladesh, with 7 gold, 16

silver and 35 bronze medals.

In the fifth position is Nepal

with 4 gold medals. Nepal

performed well in judo. In

the fifth spot is Bhutan with

two bronze medals and at last

it is Maldives with 1 bronze

this year were not serious at all. They had lack of concentration. They don't have love for their country, for if they

had they wouldn't perform so badly. Except the shooting team not a single team was

serious. And everytime we

depend on our shooters but

for how long? There has been

a lot of complains that the of-

ficials roamed around

Madras, more than around

Now let us come back again to Bangladesh! Athletes

medal.

Our Achievements in the VII SAF. Games

by Ishrak Ahmed Siddiky

Country	Gold	Silver	Bronze	Total
India	106	60	19	185
Sri Lanka	16	25	53	94
Pakistan	10	33	36	79
Bangladesh	7	17	35	59
Nepal	4	8	16	28
Bhutan	0	0	2	2
Maldives	0	0	- ī	- ī
Total :	143	143	162	448

football event I don't know?

ROM December 18 to 27 the 7th SAF Games were held in the port city of Madras. It ended with a colourful ceremony at the Jawaharlal Nehru Stadium. The next SAF Games will be held in Kathmandu in 1997. This is the second time Kathmandu is going to hold the meet. The 1st SAF Games was held there. Now let's come back what we have achieved in Madras.

7th SAF Games was nil. We didn't perform according to the expectation. And this time also our football team didn't win any gold. They lost in the final to India by a goal. Can we ever win gold in SAF

Our achievement in the

This time as always we depended on our shooters who have won 5 golds, 3 silver and 9 bronze medals. In athletics young Mahbub brought our only gold. Karar Mizanur Rahman also brought another gold, and rest were not anywhere near expectation. What's wrong with our athletes? Can't they perform well? In judo we didn't win any gold and in athletics Bimal Chandra deprived us of another gold medal and i don't want to mention our table tennis players.

India this year also became champion with 106 golds. It seems that no one can ever beat India. Their athletes are very well-trained. One

ing won 8 individual gold medals. India also won 21 gold medals in athletics while 6 in judo. Sri Lanka are in second slot with 16 gold medals.

them Jashpal Rana in shoot-

They improved very much this year. Their athletes de'Souza and Susanthika Jayasinghe were respectively judged fastest man and women of South Asia. They also won 5 gold medals in shooting. In third position is Pakistan, this year Pakistan didn't perform well at all. They won only 10 gold medals compared to lst year's

Bangladesh, but in the last two days they collected 7

the stadiums. And many intruders were seen in the Games village. The officials rather came to Madras for shopping rather than accompanying Bangladesh delegation. Our hockey team performed extremely well. They performed with Pakistan, the world champions, excellently, but went down unfortunately by 3 goals to 2. India took the gold by defeating Pakistan by 5 goals to 2. They were behind Bangladesh didn't do good in tennis. Our Tennis team won only 1 bronze medal. In kabaddi Bangladesh performed very well and won one silver medal while in wrestling we won 3 silver and 3 bronze medals. In box ing we won 2 silver and 5 bronze. In swimming we won

> 1 gold, 2 silver and 2 bronze. We shouldn't have sent our basketball team, for their performance was very poor. They lost in all the matches. Bangladesh went to the

> SAF football final four times and lost four times. What is the reason? Our captain Munna is going to retire. Coach Otto Pfister doesn't have any explanation. Munna said that "what's our problem we don't know and as long as we can't find our fault we can never win gold'! Time runs, and our time

> will pass also. Bangladesh should start practising from now if they want to do better in Kathmandu. For if they practise no one can stop them from winning gold medal.

Number of medals each country got in the 7th SAF Games:

Quiz Club

RACKERS! have a fresh mind? Here comes 1996's first set of quizes. Grab a pen and piece of paper write down the answers (don't forget to write your name, address and the date) and send the paper right away to our office by Wednesday, 10th January 1996. Which country is the largest producer of coffee?

The capital of Laos is...... In which year constantinople fell on the hands of the tucks?

At an age of 17, Cleopatra, the Egyptian queen, became joint ruler with her..... What is electrolyte?

The principal use of bwometer is When was the American football super star O J Simpson acquitted of sensational double murder

The 1996 World Cup cricket will be held in..... Who has been elected MCCI president? Prominent artists, Firoz Shain passed away in the

North Korean ex-Prime Minister Roh Tax Woo 24th November 1995 He was responsible for the fall of Britain's oldest

merchant bank, Berings Bank. Bango Bazar **Boris Baker** Venezuela NYPD Blue.

all my enthusiasm and interest. This year I even got a 3 day holiday to help me start on my new "regime". New Years Eve : Dear Di-

ary, I have to go to a party. There is going to be music and food, my last treat before D-Day !! New Year Day I : Dear di-

ary. I got up so late, it was already 9:30 am when I woke up, but I am not very disheartened, after all that was my last late night (went to bed at 3.40 am). It was a holiday today so too many guests dropped in which meant too much of snacks I even mussed my new exercise routing for a fantastic movie on television its a holiday today so I guess I can afford a few allowances. Went out for dinner at night.

P.S. Have to complete the report on my last assignment.

Day No 2 : Dear diary, my cousins dragged me to their picnic. I couldn't help it, though it meant that I lost my morning workout, ate all yummy foods as biryani, roast etc. I also missed my evening workout, was so tired you see. Lost my temper when mom asked me to tidy up my room. I was so angry I helped myself to 2 thick slices of chocolate cake (to annoy her) and even left my report unfinished

Day no 3 : Woke up so late (I sleep heavily when I am upset) My mom was sick, so cook meat pulao and "jhalchicken". it was a bit of stress on my diet. I skipped my exercise routine for I wanted to sit with my poor mom. I was bored, so I had a few sandwiches and watched

TV. Its now 12-30 and I can't sleep. Oh dear! I have forgotten to write up my report, the boss will kill me tomor-

Day no 4: Dear diary, I went to bed at 4.30 am tomorrow but still couldn't finish the report (have left some papers in the office). I got up so late that missed morning walk? I even had to skip my breakfast (I later had a hot dog at work). The boss gave me a fine lecture and ended up screaming at the peon (poor he). When I came home my mother rendered another lecture which made me so mad that I did nothing but watch TV for the rest of the day, to have revenge on her.

...... What happened to my resolutions? Forget it, life is too complicated anyway. Next Year I shall make a resolutions. 'Not to make any further resolutions again!"

Whom I Love Very Much? by Tapas Mandal

love very much my mother. And father. And brother and you -Rising Star.

The writer is a student of Class VI of St Gregory's High School.



Sprinter Mahbub Alam on the run for gold. Courtesy - Janakantha