

We have  $\neq$  nonvanishing 2-form  $\omega$ .

$\equiv$

Let  $\pi^*(\omega)$  denote the corresponding 2-form on  $(S-R)$   
 $\cong \Sigma - \bigcup_{p \in R} X_p$ .

$\square$   $\pi: \Sigma \rightarrow S$  is one to one, onto over  $S-R$ .

$$\Rightarrow \pi: \Sigma - \bigcup_{p \in R} X_p \xrightarrow{\cong} S-R$$

By the above, we have

$\Rightarrow \omega$  on  $\Sigma - \bigcup_{p \in R} X_p \Rightarrow \exists$  a 2-form on  $S-R$  which

corresponds to  $\omega$ . We put  $\pi^*(\omega)$ .

$\equiv$

Then  $j^*\pi^*(\omega)$  is a holomorphic nonzero 2-form on  $A - j^{-1}R$  and by Hartog's theorem it extends to a global nonzero holomorphic 2-form on  $A$ ; so  
 $K_A = 0$ .

$\square$   $j: A \rightarrow S$   $j: A - j^{-1}R \rightarrow S-R$

Since  $\pi^*(\omega)$  is a 2-form on  $S-R$ ,  $j^*\pi^*(\omega)$  is a 2-form on  $A - j^{-1}R$ . Since  $j^{-1}R$  is a set of points, and  $A$  is smooth ( $\dim A = 2$ ), by Hartog's theorem,  $j^*\pi^*(\omega)$  extends to a global nonzero holomorphic 2-form on  $A$ .

The extended 2-form  $j^*\pi^*(\omega)$  can be zero on the set of points. But  $\dim A = 2 \Rightarrow$  The zero